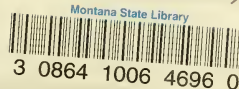


S
628.55
M26msve
4th Quarter
1992



ENVIROCON, INC.

101 INTERNATIONAL WAY
POST OFFICE BOX 8243
MISSOULA, MONTANA 59807
TELEPHONE: (406) 523-1150
FAX: (406) 523-1182

ENVIROCON, INC.

January 15, 1993
ENV #140101C09

Montana Department of Health and
Environmental Sciences
Superfund Bureau
Cogswell Building
Helena, Montana 59620

STATE DOCUMENTS COLLECTION

MAR 26 1993

MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

Attention: Mr. John Wadhams

Subject: **Fourth Quarter 1992 Soil Vapor Extraction Report, Livingston
Rail Yard**

Dear John:

This vapor extraction report addresses Livingston Rail Yard soil vapor extraction (SVE) activities and results for the October, November, and December 1992 sampling events. Included with this report are all laboratory air sample results for this reporting period and tables totalling the mass of recovered volatile organic compounds (VOCs) since the systems began operating.

Envirocon operated four SVE systems during this reporting period. These systems are located at the Electric Shop, the transfer-pit manways, the Locomotive Shop, and the in-line grit chamber.

The Waste Water Treatment Plant (WWTP) sump SVE system was removed in August during the sludge removal action. SVE was not operated at the WWTP compound or at the cinder pile during the fourth quarter of 1992, because of very low VOC recovery rates making activated-carbon usage very inefficient. The in-line grit chamber SVE system was shut off on November 25 due to freezing of the carbon units. The Locomotive Shop SVE system was shut off on December 14 due to freezing of the carbon units. Both the Electric Shop and the transfer-pit manways SVE systems were shut off on December 20 because freezing problems were expected during the holiday period. Because no systems were operated continuously throughout December, no air samples were collected in December.

PLEASE RETURN

Table 1.0 summarizes air sample results for samples collected during this reporting period. The values shown represent total volatile organic responses. The concentrations of individual VOCs detected in the influent and effluent samples are shown on the laboratory results compiled in Appendix A. Copies of the field logs for photoionization-detector readings are included in Appendix B.

Tables 2.0 through 8.0 summarize VOC recovery at each SVE system since it began operating. VOC recovery for this reporting period is shown in bold on each table. Recovery is calculated by multiplying the vapor stream concentration from the sample results by the air flow rate measured at each system and then by the number of days of operation per period of calculation. Each period of calculation correlates to one vapor-stream sample result. One thousand seven hundred and seventy-eight pounds of EPA Method 524.2 VOCs and 1,063 pounds of total VOCs not specifically identified by EPA Method 524.2 have been recovered since the beginning of SVE operation through this reporting period. Energy Laboratories, Inc. has indicated that the VOCs not specifically identified by Method 524.2 are C-9 to C-12 branch-chain hydrocarbons.

Eight SVE wells were installed at the locations shown on Figure 1.0 during the fourth quarter of 1992. These wells were installed to investigate areas where low levels of VOC contamination in the soil are possible but extensive contamination is unlikely. The well logs for these new wells are included in Appendix C. As described in a letter from Envirocon to the MDHES dated October 22, SVE tests will be run at each new well to determine if soil contamination exists and if SVE is feasible.

Soil samples were collected during installation where drilling and aeration did not preclude representative sampling. Soil samples were collected during the installation of Wells VE-39, VE-44, VE-45, and VE-47. The results of these samples are included in Appendix D. Representative soil samples could not be collected during installation of Wells VE-40, VE-41, VE-42, VE-43, and VE-46.

During the fourth quarter of 1992, SVE tests were run at Well VE-39 and VE-42. The results of soil samples (140101-SO-406 and 140101-SO-407) from Well VE-39 and the air sample collected during the SVE test (140101-SG-249) indicate some chlorinated VOCs are present in the soil at the Waste Oil Recycling Plant. Therefore, an SVE system will be constructed at this location. Based on the 22.8 ug/m³ chlorinated-ethene concentrations detected during the SVE test, chlorinated-ethene

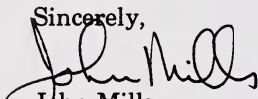
Mr. John Wadhams
January 15, 1993
Page Three

recovery from this system should be approximately 0.25 pounds per day, using a 4.5-horsepower blower. SVE tests will be run at the remainder of the new wells during early 1993.

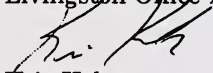
The sample collected during the SVE test at Well VE-42 contained only 4.9 ug/m³ of tetrachloroethene (PCE). This indicates that very little, if any, chlorinated-VOC contamination exists at this location. The small amount detected in the SVE test may have been drawn from VOC contamination at the nearby transfer-pit manways.

Presently, all of the SVE systems are shut off because of the difficulty in using activated carbon filters during very cold weather. On November 9, 1992, Burlington Northern Railroad requested permission to operate SVE systems without activated carbon if they recover less than one pound of VOCs per day per system. To-date, no response has been received from the MDHES. Please contact me at your earliest convenience with a response to the request concerning carbon usage and/or with any questions or comments about this report.

Sincerely,



John Mills
Livingston Office Manager



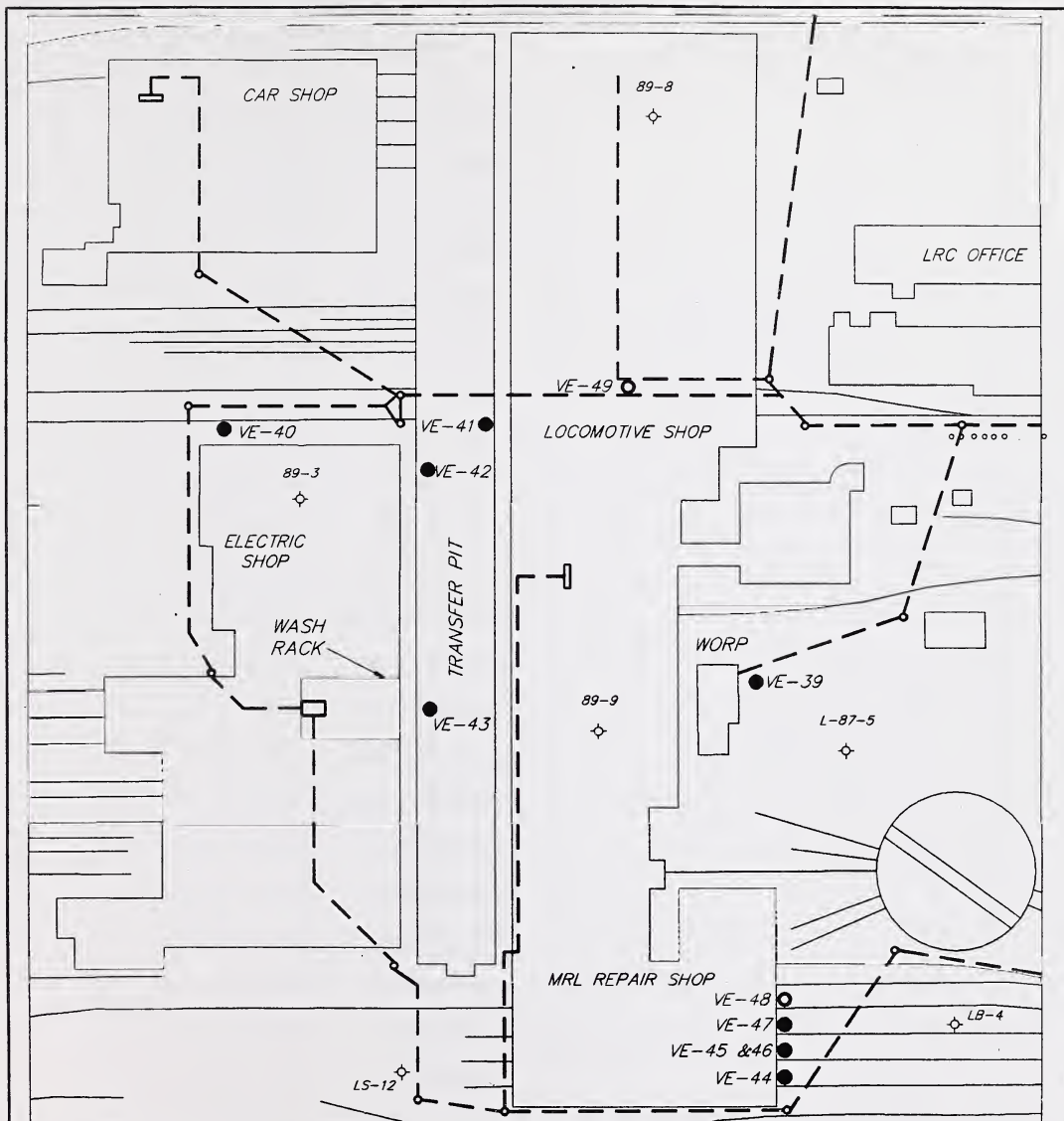
Kris Kok
Project Manager

JPM/pm
Enclosures

cc: Mel Burda
Steve Pilcher
Bob Robinson
Dick Peterson
Joe Michaletz



Digitized by the Internet Archive
in 2016



SYMBOL LEGEND

- SOIL BORING (COMPLETED)
- SOIL BORING (TO BE DRILLED IN 1993)
- DRAIN LINE
- ◇ EXISTING WELL
- MAN WAY

0 125
SCALE IN FEET



BURLINGTON NORTHERN

ENVIROCON, INC.

FOURTH QUARTER 1992
SVE REPORT

AutoCad FILE: PJ10C.DWG

SOIL VAPOR EXTRACTION
BORING LOCATIONS

1/5/93

FIGURE 1.0

TABLE 1.0

SVE SAMPLE RESULTS

| Sample Number | Sample Date | SVE System | Total VOC Response (mg/m3) | | |
|---------------|-------------|----------------------|----------------------------|----------------------|-------------------------|
| | | | Influent to Carbon Units | Between Carbon Units | Discharge to Atmosphere |
| 140101-SG-224 | 10/1/92 | Transfer-Pit Manways | 145 | | |
| 140101-SG-225 | 10/15/92 | In-Line Grit Chamber | | | <30 |
| 140101-SG-226 | 10/15/92 | In-Line Grit Chamber | | 55 | |
| 140101-SG-227 | 10/15/92 | In-Line Grit Chamber | 253 | | |
| 140101-SG-228 | 10/15/92 | Locomotive Shop | | | <30 |
| 140101-SG-229 | 10/15/92 | Locomotive Shop | | <30 | |
| 140101-SG-230 | 10/15/92 | Locomotive Shop | 35 | | |
| 140101-SG-231 | 10/15/92 | Electric Shop | | | <30 |
| 140101-SG-232 | 10/15/92 | Electric Shop | | <30 | |
| 140101-SG-233 | 10/15/92 | Electric Shop | 59 | | |
| 140101-SG-234 | 10/15/92 | Transfer-Pit Manways | | | <30 |
| 140101-SG-235 | 10/15/92 | Transfer-Pit Manways | | <30 | |
| 140101-SG-236 | 10/15/92 | Transfer-Pit Manways | 36 | | |
| 140101-SG-237 | 11/22/92 | In-Line Grit Chamber | | | <30 |
| 140101-SG-238 | 11/22/92 | In-Line Grit Chamber | | <30 | |
| 140101-SG-239 | 11/22/92 | In-Line Grit Chamber | 175 | | |
| 140101-SG-240 | 11/22/92 | Locomotive Shop | | | <30 |
| 140101-SG-241 | 11/22/92 | Locomotive Shop | | <30 | |
| 140101-SG-242 | 11/22/92 | Locomotive Shop | 34 | | |
| 140101-SG-243 | 11/22/92 | Electric Shop | | | <30 |
| 140101-SG-244 | 11/22/92 | Electric Shop | | <30 | |
| 140101-SG-245 | 11/22/92 | Electric Shop | 41 | | |
| 140101-SG-246 | 11/22/92 | Transfer-Pit Manways | | | <30 |
| 140101-SG-247 | 11/22/92 | Transfer-Pit Manways | | <30 | |
| 140101-SG-248 | 11/22/92 | Transfer-Pit Manways | 31 | | |

TABLE 2.0

IN-LINE GRIT CHAMBER SVE RESULTS

| Dates | Number of Days | Extraction Risers in Use | Carbon Units in Use | Compounds Recovered | Sample Results (mg/m3) | Air Velocity (ft/min) | Air Flow Rate (ft3/min) | VOCs Removed (#/day) | VOCs Removed (#/period) | Total VOCs (#/period) |
|------------------------|----------------|--------------------------|---------------------|---------------------|------------------------|-----------------------|-------------------------|----------------------|-------------------------|-----------------------|
| 2/26-2/28/92 (2/27) | 1.9 | VE-4, VE-5 | B,I | Total VOCs | 2080 | 5490 | 119.7 | 22.7 | | 43.0 |
| | 1.9 | VE-6, Grit Chamber | | CB | 800 | | 119.7 | 8.7 | 16.6 | |
| | 1.9 | | | 1,2-DCB | 200 | | 119.7 | 2.2 | 4.1 | |
| | 1.9 | | | 1,4-DCB | 32.5 | | 119.7 | 0.4 | 0.7 | |
| | 1.9 | | | 1,3-DCB | 16.2 | | 119.7 | 0.2 | 0.3 | |
| | 1.9 | | | 2-CT | 10.9 | | 119.7 | 0.1 | 0.2 | |
| | 1.9 | | | PCE | 5.1 | | 119.7 | 0.1 | 0.1 | |
| | 1.9 | | | Xylenes | 4.5 | | 119.7 | 0.0 | 0.1 | |
| | 1.9 | | | cis-DCE | 4.4 | | 119.7 | 0.0 | 0.1 | |
| 2/29-3/2/92 (3/1) | 2 | VE-6, Grit Chamber | B,I | Total VOCs | 1360 | 5670 | 123.6 | 15.3 | | 30.6 |
| | 2 | | | CB | 710 | | 123.6 | 8.0 | 16.0 | |
| | 2 | | | 1,2-DCB | 234 | | 123.6 | 2.6 | 5.3 | |
| | 2 | | | 1,4-DCB | 33 | | 123.6 | 0.4 | 0.7 | |
| | 2 | | | 1,3-DCB | 11 | | 123.6 | 0.1 | 0.2 | |
| | 2 | | | 2-CT | 12 | | 123.6 | 0.1 | 0.3 | |
| | 2 | | | PCE | 2.5 | | 123.6 | 0.0 | 0.1 | |
| | 2 | | | 1,2,4-TMB | 2.5 | | 123.6 | 0.0 | 0.1 | |
| 3/2-3/20/92 (3/6) | 17.8 | VE-6, Grit Chamber | I,L | Total VOCs | 2800 | 5340 | 116.4 | 29.7 | | 528.0 |
| | 17.8 | | | CB | 890 | | 116.4 | 9.4 | 167.8 | |
| | 17.8 | | | 1,2-DCB | 740 | | 116.4 | 7.8 | 139.5 | |
| | 17.8 | | | 1,4-DCB | 150 | | 116.4 | 1.6 | 28.3 | |
| | 17.8 | | | 1,3-DCB | 13 | | 116.4 | 0.1 | 2.5 | |
| | 17.8 | | | 2-CT | 11 | | 116.4 | 0.1 | 2.1 | |
| | 17.8 | | | PCE | 15 | | 116.4 | 0.2 | 2.8 | |
| | 17.8 | | | 1,2,4-TMB | 4.6 | | 116.4 | 0.0 | 0.9 | |
| | 17.8 | | | Xylenes | 3.5 | | 116.4 | 0.0 | 0.7 | |
| 3/20-3/27/92 (3/20) | 7 | VE-6, Grit Chamber | I,L | Total VOCs | 2443 | 5630 | 122.7 | 27.3 | | 191.0 |
| | 7 | | | CB | 730 | | 122.7 | 8.2 | 57.1 | |
| | 7 | | | 1,2-DCB | 872 | | 122.7 | 9.7 | 68.2 | |
| | 7 | | | 1,4-DCB | 140 | | 122.7 | 1.6 | 10.9 | |
| | 7 | | | 1,3-DCB | 9.8 | | 122.7 | 0.1 | 0.8 | |
| | 7 | | | 2-CT | 12 | | 122.7 | 0.1 | 0.9 | |
| | 7 | | | PCE | 3.4 | | 122.7 | 0.0 | 0.3 | |
| | 7 | | | 1,2,4-TMB | 3 | | 122.7 | 0.0 | 0.2 | |
| 3/27-4/3/92 (4/3) | 7 | VE-6, Grit Chamber | I,L,B,N | Total VOCs | 878 | 2586 | 126.7 | 10.1 | | 70.9 |
| | 7 | | | CB | 128 | | 126.7 | 1.5 | 10.3 | |
| | 7 | | | 1,2-DCB | 280 | | 126.7 | 3.2 | 22.6 | |
| | 7 | | | 1,4-DCB | 32 | | 126.7 | 0.4 | 2.6 | |
| | 7 | | | 1,3-DCB | 7 | | 126.7 | 0.1 | 0.6 | |
| | 7 | | | 2-CT | 10 | | 126.7 | 0.1 | 0.8 | |
| | 7 | | | PCE | 3.4 | | 126.7 | 0.0 | 0.3 | |
| | 7 | | | | | | 126.7 | | | |

TABLE 2.0, cont.

IN-LINE GRIT CHAMBER SVE RESULTS

| Dates | Number of Days | Extraction Risers In Use | Carbon Units In Use | Compounds Recovered | Sample Results (mg/m3) | Air Velocity (ft/min) | Air Flow Rate (ft3/min) | VOCs Removed (#/day) | VOCs Removed (#/period) | Total VOCs (#/period) |
|--|----------------|-------------------------------|---------------------|---------------------|------------------------|-----------------------|-------------------------|----------------------|-------------------------|-----------------------|
| | | | | | | | Totals from page one: | | 565.2 | 863.5 |
| 4/4-4/25/92 (4/17) | 21 | VE-6,VE-22 Grit Chamber | L,N | Total VOCs | 580 | 2466 | 120.8 | 6.4 | | 133.9 |
| | 21 | | | CB | 129 | | 120.8 | 1.4 | 29.8 | |
| | 21 | | | 1,2-DCB | 119 | | 120.8 | 1.3 | 27.5 | |
| | 21 | | | 1,4-DCB | 21 | | 120.8 | 0.2 | 4.8 | |
| | 21 | | | 1,3-DCB | 5.3 | | 120.8 | 0.1 | 1.2 | |
| | 21 | | | 2-CT | 9.3 | | 120.8 | 0.1 | 2.1 | |
| 4/26-5/5/92 (5/4) | 11 | VE-6,VE-22 Grit Chamber | L,N | Total VOCs | 430 | 2701 | 132.3 | 5.2 | | 57.0 |
| | 11 | | | CB | 90 | | 132.3 | 1.1 | 11.9 | |
| | 11 | | | 1,2-DCB | 79 | | 132.3 | 1.0 | 10.5 | |
| | 11 | | | 1,4-DCB | 15 | | 132.3 | 0.2 | 2.0 | |
| | 11 | | | 1,3-DCB | 4.7 | | 132.3 | 0.1 | 0.6 | |
| | 11 | | | 2-CT | 7.2 | | 132.3 | 0.1 | 1.0 | |
| 5/5-5/22/92 (5/18) | 14 | VE-6,VE-22 | N,M | Total VOCs | 509 | 2430 | 119.1 | 5.5 | | 77.2 |
| | 14 | | | CB | 107 | | 119.1 | 1.2 | 16.2 | |
| | 14 | | | 1,2-DCB | 193 | | 119.1 | 2.1 | 29.3 | |
| | 14 | | | 1,4-DCB | 19 | | 119.1 | 0.2 | 2.9 | |
| | 14 | | | 2-CT | 5.6 | | 119.1 | 0.1 | 0.8 | |
| | 14 | | | PCE | 3.6 | | 119.1 | 0.0 | 0.5 | |
| 5/22-6/5/92 (5/29) | 12.4 | VE-6,VE-22 | N,M | Total VOCs | 355.2 | 2550 | 125.0 | 4.0 | | 50.1 |
| | 13.4 | | | CB | 32 | | 125.0 | 0.4 | 4.9 | |
| | 13.4 | | | 1,2-DCB | 63 | | 125.0 | 0.7 | 9.6 | |
| | 13.4 | | | 1,4-DCB | 19 | | 125.0 | 0.2 | 2.9 | |
| | 13.4 | | | 2-CT | 4.8 | | 125.0 | 0.1 | 0.7 | |
| | 13.4 | | | PCE | 4.4 | | 125.0 | 0.1 | 0.7 | |
| 6/5-6/19/92 (6/12) | 11.4 | VE-6,VE-22 | N,M | Total VOCs | 758 | 2520 | 123.5 | 8.5 | | 97.1 |
| | 11.4 | | | CB | 51 | | 123.5 | 0.6 | 6.5 | |
| | 11.4 | | | 1,2-DCB | 165 | | 123.5 | 1.9 | 21.1 | |
| | 11.4 | | | 1,4-DCB | 27 | | 123.5 | 0.3 | 3.5 | |
| | 11.4 | | | 1,3-DCB | 6.6 | | 123.5 | 0.1 | 0.8 | |
| | 11.4 | | | 2-CT | 4.3 | | 123.5 | 0.0 | 0.6 | |
| 6/19-7/3/92 (6/26) | 11.6 | VE-6,VE-22 | J,M | Total VOCs | 302 | 2430 | 119.1 | 3.3 | | 38.0 |
| | 11.6 | | | CB | 15 | | 119.1 | 0.2 | 1.9 | |
| | 11.6 | | | 1,2-DCB | 220 | | 119.1 | 2.4 | 27.7 | |
| | 11.6 | | | 1,4-DCB | 8.5 | | 119.1 | 0.1 | 1.1 | |
| | 11.6 | | | 1,3-DCB | 3.3 | | 119.1 | 0.0 | 0.4 | |
| | 11.6 | | | PCE | 2.5 | | 119.1 | 0.0 | 0.3 | |
| 7/3-7/27/92 (7/16) System off 7/25-7/26 | 22.1 | VE-6,VE-22 | J,M | Total VOCs | 398 | 2565 | 125.7 | 4.6 | | 100.6 |
| | 22.1 | | | CB | 15 | | 125.7 | 0.2 | 3.8 | |
| | 22.1 | | | 1,2-DCB | 170 | | 125.7 | 1.9 | 43.0 | |
| | 22.1 | | | 1,4-DCB | 21 | | 125.7 | 0.2 | 5.3 | |
| | 22.1 | | | 1,3-DCB | 9.4 | | 125.7 | 0.1 | 2.4 | |
| | 22.1 | | | PCE | 4.4 | | 125.7 | 0.1 | 1.1 | |

TABLE 2.0, cont.

IN-LINE GRIT CHAMBER SVE RESULTS

| Dates | Number of Days | Extraction Risers In Use | Carbon Units In Use | Compounds Recovered | Sample Results (mg/m3) | Air Velocity (ft/min) | Air Flow Rate (ft3/min) | VOCs Removed (#/day) | VOCs Removed (#/period) | Total VOCs (#/period) |
|------------------------------|----------------|--------------------------|---------------------|---------------------|------------------------|-----------------------|-------------------------|----------------------|-------------------------|-----------------------|
| | | | | | | | Totals from page two: | | 846.4 | 1417.3 |
| 7/27-8/1/92 (7/31) | 3 | VE4,-VE-5 | J,M | Total VOCs | 6 | 2565 | 125.7 | 0.1 | 0.1 | 0.2 |
| | 3 | | | PCE | 2.6 | | 125.7 | 0.0 | | |
| | 3 | | | 1,2-DCB | 3.4 | | 125.7 | 0.0 | | |
| System off 7/29 | | | | | | | | | | |
| System on 7/30 | | | | | | | | | | |
| System off 7/31 | | | | | | | | | | |
| System on 8/11 | | | | | | | | | | |
| System off 8/14 | | | | | | | | | | |
| System on 8/31 | | | | | | | | | | |
| 8/11-9/30/92 (9/16) | 34.8 | VE-6, VE-Tank | M,I (8/31) | Total VOCs | 550 | 2340 | 114.7 | 5.7 | 8.4 | 199.7 |
| | 34.8 | | | CB | 23 | | 114.7 | 0.2 | | |
| | 34.8 | | | Chloroform | 4.3 | | 114.7 | 0.0 | | |
| | 34.8 | | | 1,2-DCB | 130 | | 114.7 | 1.4 | | |
| | 34.8 | | | 1,4-DCB | 17 | | 114.7 | 0.2 | | |
| | 34.8 | | | 1,3-DCB | 5.8 | | 114.7 | 0.1 | | |
| | 34.8 | | | PCE | 3.9 | | 114.7 | 0.0 | 1.4 | |
| 9/30-10/30/92 (10/15) | 20 | VE-6 VE Tank | M,I | Total VOCs | 253 | 2475 | 121.0 | 2.8 | 28.6 | 55.7 |
| | 20 | | | 1,2-DCB | 130 | | 121.0 | 1.4 | | |
| | 20 | | | 1,4-DCB | 12 | | 121.0 | 0.1 | | |
| | 20 | | | CB | 7.1 | | 121.0 | 0.1 | | |
| | 20 | | | 1,3-DCB | 7 | | 121.0 | 0.1 | | |
| | 20 | | | PCE | 3.5 | | 121.0 | 0.0 | 0.8 | |
| System off 10/17 | | | | | | | | | | |
| System on 10/27 | | | | | | | | | | |
| 10/30-11/25/92 (11/22) | 27 | VE-6, VE-22 (10/27) | I,C (10/27) | Total VOCs | 175 | 2565 | 126.0 | 2.0 | 12.4 | 54.2 |
| | 27 | | | 1,2-DCB | 40 | | 126.0 | 0.5 | | |
| | 27 | | | CB | 15 | | 126.0 | 0.2 | | |
| | 27 | | | 1,4-DCB | 11 | | 126.0 | 0.1 | | |
| | 27 | | | PCE | 5.5 | | 126.0 | 0.1 | | |
| | 27 | | | 1,3-DCB | 4.4 | | 126.0 | 0.1 | | |
| | 27 | | | cis-DCE | 2.5 | | 126.0 | 0.0 | 0.8 | |
| System off 11/25 | | | | | | | | | | |
| VOCs Removed (2/26-11/25/92) | | | | | | | | | 972.8 | 1727.1 |

Note:

(xx/xx) = Date sample was collected

Total VOCs = Total Volatile Organic Compounds

cis-DCE = cis-1,2-Dichloroethene

PCE = Tetrachloroethene

TCE = Trichloroethene

CB = Chlorobenzene

1,2-DCB = 1,2-Dichlorobenzene

1,4-DCB = 1,4-Dichlorobenzene

1,3-DCB = 1,3-Dichlorobenzene

2-CT = 2-Chlorotoluene

1,2,4-TMB = 1,2,4-Trimethylbenzene

TABLE 3.0

LOCOMOTIVE SHOP SVE RESULTS

| Dates | Number of Days | Extraction Risers In Use | Carbon Units In Use | Compounds Recovered | Sample Results (mg/m3) | Air Velocity (ft/min) | Air Flow Rate (ft3/min) | VOCs Removed (#/day) | VOCs Removed (#/period) | Total VOCs (#/period) |
|---|--------------------------|---|---------------------|---|-------------------------------|-----------------------|----------------------------------|---------------------------------|---------------------------|-----------------------|
| 2/26-2/28/92 (2/27) | 1.9 1.9 1.9 1.9 | VE-11,VE-12, VE-28,VE-29, VE-30 | H,M | Total VOCs cis-DCE PCE TCE Chloroform | 681 25 620 10 4.5 | 5850 | 127.5 127.5 127.5 127.5 | 7.9 0.3 7.2 0.1 0.1 | 0.6 13.7 0.2 0.1 | 15.0 |
| 2/29-3/2/92 (3/1) | 2 2 2 2 | VE-11,VE-12, VE-28,VE-29, VE-30 | H,M | Total VOCs cis-DCE PCE TCE | 358 5.1 350 3.1 | 5850 | 127.5 127.5 127.5 127.5 | 4.2 0.1 4.1 0.0 | 0.1 8.1 0.1 | 8.3 |
| 3/2-3/16/92 (3/6) | 13.7 13.7 13.7 | VE-11,VE-12, VE-29,VE-30, | H,M | Total VOCs cis-DCE PCE | 183 3.1 180 | 5760 | 125.6 125.6 125.6 | 2.1 0.0 2.1 | 0.5 28.2 | 28.6 |
| 3/16-3/27/92 (3/20) | 11 11 | VE-11,VE-28, VE-30 | H,M | Total VOCs PCE | 94 94 | 6000 | 130.8 130.8 | 1.1 1.1 | 12.3 | 12.3 |
| 3/28-4/10/92 (4/3) | 13.2 13.2 | VE-11,VE-28, VE-29 | H,M | Total VOCs PCE | 68 68 | 2632 | 129.0 129.0 | 0.8 0.8 | 10.5 | 10.5 |
| 4/11-4/24/92 (4/17) | 13 13 | VE-11,VE-28, VE-29 | H,M | Total VOCs PCE | 65 65 | 2530 | 124.0 124.0 | 0.7 0.7 | 9.5 | 9.5 |
| 4/25-5/5/92 (5/4) | 8.2 8.2 | VE-11,VE-28, VE-29 | H,M | Total VOCs PCE | 48 48 | 2530 | 124.0 124.0 | 0.5 0.5 | 4.4 | 4.4 |
| System off 5/5 System on 6/23 | | | | | | | | | | |
| 6/23-7/3/92 (6/26) | 11 11 11 | VE-11,VE-29, Pushing air into VE-28 | H,F | Total VOCs cis-DCE PCE | 72.5 2.5 70 | 2340 | 114.7 114.7 114.7 | 0.8 0.0 0.7 | 0.3 8.0 | 8.3 |
| 7/3-7/24/92 (7/16) | 20.9 20.9 | VE-11,VE-29, Pushing air into VE-28 | H,F | Total VOCs PCE | 40 40 | 2340 | 114.7 114.7 | 0.4 0.4 | 8.7 | 8.7 |
| 7/24-9/6/92 (7/31) | 16.7 16.7 | VE-11,VE-29, Pushing air into VE-28 | H,F | Total VOCs PCE | 40 40 | 2340 | 114.7 114.7 | 0.4 0.4 | 7.0 | 7.0 |
| 9/6-9/30/92 (9/16) | 24 24 | VE-11,VE-29, Pushing air into VE-28 | H,F | Total VOCs PCE | 32 32 | 2250 | 110.3 110.3 | 0.3 0.3 | 7.7 | 7.7 |
| 9/30-10/30/92 (10/15) | 22.8 22.8 | VE-11,VE-29 Injecting air into VE-28 (turned off 10/15) | H,F | Total VOCs PCE | 35 35 | 2295 | 112.0 112.0 | 0.4 0.4 | 8.1 | 8.1 |
| System off 10/20 System on 10/27 | | | | | | | | | | |
| 10/30-12/14/92 (11/22) | 39 39 | VE-11,VE-29 | H,F | Total VOCs PCE | 34 34 | 2295 | 112.0 112.0 | 0.3 0.3 | 13.5 | 13.5 |
| System off 11/25 System on 12/2 System off 12/14 | | | | | | | | | | |
| VOCs removed 2/26-12/14/92 | | | | | | | | | 141.7 | 142.2 |

Note:

(xx/xx) = Date sample was collected

Total VOCs = Total Volatile Organic Compounds

cis-DCE = cis-1,2-Dichloroethene

PCE = Tetrachloroethene

TCE = Trichloroethene

TABLE 4.0

MAIN GRIT-CHAMBER COMPOUND SVE RESULTS

| Dates | Number of Days | Extraction Risers In Use | Carbon Units In Use | Compounds Recovered | Sample Results (mg/m3) | Air Velocity (ft/min) | Air Flow Rate (ft3/min) | VOCs Removed (#/day) | VOCs Removed (#/period) | Total VOCs (#/period) |
|------------------------|----------------|--------------------------|---------------------|---------------------|------------------------|-----------------------|-------------------------|----------------------|-------------------------|-----------------------|
| 2/26-2/28/92 (2/27) | 1.9 | VE-1,VE-2, VE-3 | A,Q | Total VOCs | 227 | 5670 | 123.6 | 2.6 | | 4.9 |
| | 1.9 | | | cis-DCE | 150 | | 123.6 | 1.7 | 3.2 | |
| | 1.9 | | | PCE | 32 | | 123.6 | 0.4 | 0.7 | |
| | 1.9 | | | TCE | 30 | | 123.6 | 0.3 | 0.6 | |
| | 1.9 | | | CB | 15 | | 123.6 | 0.2 | 0.3 | |
| 2/29-3/6/92 (3/1) | 7 | VE-1,VE-2, VE-3 | A,Q | Total VOCs | 198 | 5700 | 124.3 | 2.2 | | 15.7 |
| | 7 | | | cis-DCE | 96 | | 124.3 | 1.1 | 7.6 | |
| | 7 | | | PCE | 29 | | 124.3 | 0.3 | 2.3 | |
| | 7 | | | TCE | 27 | | 124.3 | 0.3 | 2.1 | |
| | 7 | | | CB | 14 | | 124.3 | 0.2 | 1.1 | |
| 3/6-3/20/92 (3/6) | 12.9 | VE-1,VE-2, VE-3 | A,Q | Total VOCs | 228 | 5670 | 123.6 | 2.6 | | 33.1 |
| | 12.9 | | | cis-DCE | 104 | | 123.6 | 1.2 | 15.1 | |
| | 12.9 | | | PCE | 42 | | 123.6 | 0.5 | 6.1 | |
| | 12.9 | | | TCE | 21 | | 123.6 | 0.2 | 3.0 | |
| | 12.9 | | | CB | 12 | | 123.6 | 0.1 | 1.7 | |
| 3/20-3/27/92 (3/20) | 7 | VE-1,VE-2, VE-3 | A,Q | Total VOCs | 201 | 5445 | 118.7 | 2.2 | | 15.2 |
| | 7 | | | cis-DCE | 72 | | 118.7 | 0.8 | 5.4 | |
| | 7 | | | PCE | 39 | | 118.7 | 0.4 | 2.9 | |
| | 7 | | | TCE | 29 | | 118.7 | 0.3 | 2.2 | |
| | 7 | | | CB | 11 | | 118.7 | 0.1 | 0.8 | |
| 3/28-4/11/92 (4/3) | 14 | VE-1,VE-2, VE-3 | A,Q | Total VOCs | 206 | 2593 | 127.1 | 2.4 | | 33.3 |
| | 14 | | | cis-DCE | 51 | | 127.1 | 0.6 | 8.3 | |
| | 14 | | | PCE | 49 | | 127.1 | 0.6 | 7.9 | |
| | 14 | | | TCE | 30 | | 127.1 | 0.3 | 4.9 | |
| | 14 | | | CB | 9.8 | | 127.1 | 0.1 | 1.6 | |
| 4/12-4/26/92 (4/17) | 15 | VE-1,VE-2, VE-3 | A,Q,R | Total VOCs | 125 | 2421 | 118.6 | 1.3 | | 20.2 |
| | 15 | | | cis-DCE | 20 | | 118.6 | 0.2 | 3.2 | |
| | 15 | | | PCE | 33 | | 118.6 | 0.4 | 5.3 | |
| | 15 | | | TCE | 17 | | 118.6 | 0.2 | 2.8 | |
| | 15 | | | CB | 8.4 | | 118.6 | 0.1 | 1.4 | |
| 4/27-5/15/92 (5/4) | 18 | VE-1,VE-2, VE-3 | A,Q,R | Total VOCs | 64 | 2685 | 131.6 | 0.8 | | 13.8 |
| | 18 | | | cis-DCE | 17 | | 131.6 | 0.2 | 3.7 | |
| | 18 | | | PCE | 32 | | 131.6 | 0.4 | 6.9 | |
| | 18 | | | TCE | 10 | | 131.6 | 0.1 | 2.2 | |
| | 18 | | | CB | 5.2 | | 131.6 | 0.1 | 1.1 | |
| 5/15-5/29/92 (5/22) | 10.5 | VE-1,VE-2, VE-3 ** | Q,R | Total VOCs | 63.8 | 2390 | 117.1 | 0.7 | | 7.1 |
| | 10.5 | | | cis-DCE | 17 | | 117.1 | 0.2 | 1.9 | |
| | 10.5 | | | PCE | 30 | | 117.1 | 0.3 | 3.4 | |
| | 10.5 | | | TCE | 13 | | 117.1 | 0.1 | 1.5 | |
| | 10.5 | | | CB | 5.2 | | 117.1 | 0.1 | 0.6 | |
| 5/29-6/12/92 (6/5) | 12.6 | VE-1,VE-2, VE-3 ** | Q,R | Total VOCs | 56 | 2520 | 123.5 | 0.6 | | 7.9 |
| | 12.6 | | | cis-DCE | 13 | | 123.5 | 0.1 | 1.8 | |
| | 12.6 | | | PCE | 32 | | 123.5 | 0.4 | 4.5 | |
| | 12.6 | | | TCE | 11 | | 123.5 | 0.1 | 1.6 | |

TABLE 4.0, cont.

MAIN GRIT CHAMBER COMPOUND SVE RESULTS

| Dates | Number of Days | Extraction Risers In Use | Carbon Units In Use | Compounds Recovered | Sample Results (mg/m3) | Air Velocity (ft/min) | Air Flow Rate (ft3/min) | VOCs Removed (#/day) | VOCs Removed (#/period) | Total VOCs (#/period) |
|-----------------------------|----------------|--------------------------|---------------------|---------------------|------------------------|-----------------------|-------------------------|----------------------|-------------------------|-----------------------|
| | | | | | | | Totals from page one: | | 119.9 | 151.2 |
| 6/12-6/26/92 (6/19) | 14 | VE-1,VE-2, | Q,R | Total VOCs | 25.4 | 2520 | 123.5 | 0.3 | 0.8 | 4.0 |
| | 14 | VE-3 | | cis-DCE | 5.1 | | 123.5 | 0.1 | | |
| | 14 | ** | | PCE | 17 | | 123.5 | 0.2 | | |
| | 14 | | | TCE | 3.3 | | 123.5 | 0.0 | | |
| 6/26-7/10/92 (7/2) | 14 | VE-1,VE-2, | Q,R | Total VOCs | 30.2 | 2565 | 125.7 | 0.3 | 1.6 | 4.8 |
| | 14 | VE-3 | | cis-DCE | 10 | | 125.7 | 0.1 | | |
| | 14 | ** | | PCE | 16 | | 125.7 | 0.2 | | |
| | 14 | | | TCE | 4.2 | | 125.7 | 0.0 | | |
| 7/10-7/24/92 (7/16) | 14 | VE-1,VE-2, | Q,R | Total VOCs | 25.9 | 2520 | 123.5 | 0.3 | 1.4 | 4.1 |
| | 14 | VE-3 | | cis-DCE | 8.6 | | 123.5 | 0.1 | | |
| | 14 | ** | | PCE | 14 | | 123.5 | 0.2 | | |
| | 14 | | | TCE | 3.3 | | 123.5 | 0.0 | | |
| 7/24-9/6/92 (7/31) | 16.7 | VE-1,VE-2, | Q,R | Total VOCs | 21.9 | 2520 | 123.5 | 0.2 | 1.4 | 4.1 |
| | 16.7 | VE-3 | | cis-DCE | 7.4 | | 123.5 | 0.1 | | |
| | 16.7 | ** | | PCE | 12 | | 123.5 | 0.1 | | |
| | 16.7 | | | TCE | 2.5 | | 123.5 | 0.0 | | |
| 9/6-9/18/92 (9/16) | 11.5 | VE-1,VE-2, | D,R (8/31) | Total VOCs | 23.1 | 2520 | 123.5 | 0.3 | 1.1 | 3.0 |
| | 11.5 | VE-3 | | cis-DCE | 8.4 | | 123.5 | 0.1 | | |
| | 11.5 | ** | | PCE | 12 | | 123.5 | 0.1 | | |
| | | | | TCE | 2.7 | | 123.5 | 0.0 | | |
| System off 9/18 | | | | | | | | | | |
| VOCs Removed (2/26-9/18/92) | | | | | | | | | 139.6 | 171.2 |

Note:

(xx/xx) = Date sample was collected

Total VOCs = Total Volatile Organic Compounds

cis-DCE = cis-1,2-Dichloroethene

PCE = Tetrachloroethene

TCE = Trichloroethene

CB = Chlorobenzene

** = With packers drawing from bottom 5'

TABLE 5.0

WWTP SUMP SVE RESULTS

| Dates | Number of Days | Extraction Risers In Use | Carbon Units In Use | Compounds Recovered | Sample Results (mg/m3) | Air Velocity (ft/min) | Air Flow Rate (ft3/min) | VOCs Removed (#/day) | VOCs Removed (#/period) | Total VOCs (#/period) |
|----------------------------|----------------|--------------------------|---------------------|---------------------|------------------------|-----------------------|-------------------------|----------------------|-------------------------|-----------------------|
| 2/7-2/8/92 (2/7) | 1.5 | VE-31,VE-32 | J,G | Total VOCs | 282 | 2151 | 187.8 | 4.8 | | 7.2 |
| | 1.5 | VE-33 | | cis-DCE | 112 | | 187.8 | 1.9 | 2.9 | |
| | 1.5 | | | trans-DCE | 3.5 | | 187.8 | 0.1 | 0.1 | |
| | 1.5 | | | CB | 3.2 | | 187.8 | 0.1 | 0.1 | |
| | 1.5 | | | 2-CT | 16 | | 187.8 | 0.3 | 0.4 | |
| 2/9-2/10/92 (2/10) | 1.6 | VE-31,VE-32 | J,G | Total VOCs | 414 | 2151 | 187.8 | 7.1 | | 11.3 |
| | 1.6 | VE-33 | | cis-DCE | 75 | | 187.8 | 1.3 | 2.1 | |
| | 1.6 | | | PCE | 3.7 | | 187.8 | 0.1 | 0.1 | |
| System off | 1.6 | | | 2-CT | 29 | | 187.8 | 0.5 | 0.8 | |
| 2/10-2/24 | 1.6 | | | CB | 6.2 | | 187.8 | 0.1 | 0.2 | |
| 2/24-3/12/92 (2/28) | 14.9 | VE-31,VE-32 | J,G | Total VOCs | 240 | 1350 | 117.9 | 2.6 | | 38.4 |
| | 14.9 | VE-33 | | cis-DCE | 47 | | 117.9 | 0.5 | 7.5 | |
| | 14.9 | | | PCE | 3.4 | | 117.9 | 0.0 | 0.5 | |
| System off | 14.9 | | | 2-CT | 15 | | 117.9 | 0.2 | 2.4 | |
| 3/12-4/8 | 14.9 | | | CB | 5.2 | | 117.9 | 0.1 | 0.8 | |
| 4/8-4/20/92 (4/13) | 12 | VE-31,VE-32 | J,G | Total VOCs | 45 | 2070 | 180.7 | 0.7 | | 8.9 |
| | 12 | VE-33,VE-34 VE-38 | | cis-DCE | 3.8 | | 180.7 | 0.1 | 0.7 | |
| 4/20-4/30/92 (4/27) | 10 | VE-31,VE-32 | J,G | Total VOCs | 101 | 2070 | 180.7 | 1.7 | | 16.6 |
| | 10 | VE-33,VE-34 | | cis-DCE | 4.7 | | 180.7 | 0.1 | 0.8 | |
| | 10 | VE-38 | | 2-CT | 5 | | 180.7 | 0.1 | 0.8 | |
| | 10 | | | CB | 2.9 | | 180.7 | 0.0 | 0.5 | |
| System off | | | | | | | | | | |
| 4/29 | | | | | | | | | | |
| VOCs Removed (2/7-4/30/92) | | | | | | | | | 20.7 | 82.4 |

Note:

(xx/xx) = Date sample was collected

Total VOCs = Total Volatile Organic Compounds

cis-DCE = cis-1,2-Dichloroethene

trans-DCE = trans-1,2-Dichloroethene

CB = Chlorobenzene

2-CT = 2-Chlorotoluene

PCE = Tetrachloroethene

TABLE 6.0

ELECTRIC SHOP SVE RESULTS

| Dates | Number of Days | Extraction Risers in Use | Carbon Units in Use | Compounds Recovered | Sample Results (mg/m3) | Air Velocity (ft/min) | Air Flow Rate (ft3/min) | VOCs Removed (#/day) | VOCs Removed (#/period) | Total VOCs (#/period) |
|---|--------------------------|--------------------------|---------------------|-------------------------------------|----------------------------|-----------------------|----------------------------------|--------------------------|-------------------------|-----------------------|
| 3/5-3/9/92 (3/6) | 3.8 3.8 3.8 3.8 | VE-19 | O,P | Total VOCs cis-DCE PCE TCE | 72 4 60 7.8 | 5850 | 127.5 127.5 127.5 127.5 | 0.8 0.0 0.7 0.1 | 0.2 2.6 0.3 | 3.2 |
| 3/9-3/11/92 (3/9) | 2.4 2.4 2.4 2.4 | VE-19 | O,P | Total VOCs cis-DCE PCE TCE | 60 2.5 52 5 | 5850 | 127.5 127.5 127.5 127.5 | 0.7 0.0 0.6 0.1 | 0.1 1.4 0.1 | 1.7 |
| System off 3/11 System on 3/23 | | | | | | | | | | |
| 3/23-3/27/92 (3/24) | 4 4 4 4 | VE-18-VE-20 | O,P | Total VOCs cis-DCE PCE TCE | 1212 3.7 1200 8.1 | | 40.0 40.0 40.0 40.0 | 4.4 0.0 4.4 0.0 | 0.1 17.5 0.1 | 17.6 |
| 3/27-4/11/92 (4/1) | 12.1 12.1 12.1 | VE-18-VE-20 | O,P | Total VOCs PCE TCE | 424 420 4.2 | | 40.0 40.0 40.0 | 1.5 1.5 0.0 | 18.5 0.2 | 18.7 |
| 4/11-4/24/92 (4/17) | 14 14 14 | VE-18-VE-20 | O,P | Total VOCs PCE TCE | 226 221 4.6 | | 40.0 40.0 40.0 | 0.8 0.8 0.0 | 11.3 0.2 | 11.5 |
| 4/25-5/9/92 (5/4) | 15 15 15 | VE-18-VE-20 | O,P | Total VOCs PCE TCE | 295 291 3.7 | | 40.0 40.0 40.0 | 1.1 1.1 0.0 | 15.9 0.2 | 16.1 |
| 5/9-5/25/92 (5/18) | 17 17 17 | VE-18-VE-20 | O,P | Total VOCs PCE TCE | 150 146 4.1 | | 40.0 40.0 40.0 | 0.5 0.5 0.0 | 9.0 0.3 | 9.3 |
| 5/25-6/5/92 (5/29) | 12 12 12 | VE-18,VE-20 VE-23 | O,P | Total VOCs PCE TCE | 424.4 421 3.4 | 2750 | 134.8 134.8 134.8 | 5.2 5.2 0.0 | 61.9 0.5 | 62.4 |
| 6/5-6/19/92 (6/12) | 14 14 14 | VE-18-VE-20 VE-23 | O,P | Total VOCs PCE TCE | 295.4 290 5.4 | 2750 | 134.8 134.8 134.8 | 3.6 3.6 0.1 | 49.8 0.9 | 50.7 |
| 6/19-7/3/92 (6/26) | 14 14 14 | VE-18,VE-20 VE-23 | O,P | Total VOCs PCE TCE | 266.7 260 6.7 | 2430 | 119.1 119.1 119.1 | 2.9 2.8 0.1 | 39.4 1.0 | 40.5 |
| 7/3-7/24/92 (7/16) | 21 21 21 | VE-18,VE-20 VE-23 | O,P | Total VOCs PCE TCE | 185 180 5.5 | 2475 | 121.3 121.3 121.3 | 2.0 2.0 0.1 | 41.7 1.3 | 42.9 |
| 7/24-9/6/92 (7/31) | 16.7 16.7 16.7 | VE-18,VE-20 VE-23 | O,P | Total VOCs PCE TCE | 186 180 5.5 | 2475 | 121.3 121.3 121.3 | 2.1 2.0 0.1 | 33.2 1.0 | 34.3 |
| 9/6-9/30/92 (9/16) | 24 24 24 | VE-18,VE-20 VE-23 | P,A (8/31) | Total VOCs PCE TCE | 154 150 3.8 | 2475 | 121.3 121.3 121.3 | 1.7 1.7 0.0 | 39.7 1.0 | 40.8 |
| 9/30-10/30/92 (10/15) | 22.8 22.8 | VE-18,VE-20 VE-23 | P,A | Total VOCs PCE | 59 59 | 2587 | 127.0 127.0 | 0.7 0.7 | 15.5 | 15.5 |
| System off 10/20 System on 10/27 | | | | | | | | | | |
| 10/31-12/20/92 (11/22) | 45 45 | VE-18,VE-20 VE-23 | P,A | Total VOCs PCE | 41 41 | 2587 | 127.0 127.0 | 0.5 0.5 | 21.3 | 21.3 |
| System off 11/25 System on 12/2 System off 12/20 | | | | | | | | | | |
| VOCs Removed (3/5-12/20/92) | | | | | | | | | 386.4 | 386.5 |

Note:

(xx/xx) = Date sample was collected

Total VOCs = Total Volatile Organic Compounds

cis-DCE = cis-1,2-Dichloroethene

PCE = Tetrachloroethene

TABLE 7.0

TRANSFER-PIT MANWAY SVE RESULTS

| Dates | Number of Days | Extraction Risers In use | Carbon Units In use | Compounds Recovered | Sample Results (mg/m3) | Air Velocity (ft/min) | Air Flow Rate (ft3/min) | VOCs Removed (#/day) | VOCs Removed (#/period) | Total VOCs (#/period) |
|--|--------------------------|----------------------------|---------------------|---|---------------------------------|-----------------------|---|---------------------------------|----------------------------------|-----------------------|
| 3/23-3/27/92 (3/24) | 4 4 4 4 4 | VE-13 | O,P | Total VOCs PCE TCE cis-DCE CB | 575 390 2.5 2.5 180 | 1240 | 108.3 108.3 108.3 108.3 108.3 | 5.7 3.8 0.0 0.0 1.8 | 15.4 0.1 0.1 0.1 7.1 | 22.7 |
| 3/27-4/10/92 (4/1) | 12.1 12.1 | VE-13 | O,P | Total VOCs PCE | 126 126 | 1150 | 100.4 100.4 | 1.2 1.2 | 13.9 | 13.9 |
| 4/11-4/24/92 (4/17) | 14 14 | VE-13 | O,P | Total VOCs PCE | 86 86 | 1150 | 100.4 100.4 | 0.8 0.8 | 11.0 | 11.0 |
| 4/25-5/9/92 (5/4) | 15 15 | VE-13 | O,P | Total VOCs PCE | 70 70 | 1200 | 104.8 104.8 | 0.7 0.7 | 10.0 | 10.0 |
| 5/9-5/25/92 (5/18) | 15.8 15.8 | VE-13,VE-24 VE-25,VE-26 | O,P | Total VOCs PCE | 79 79 | 1125 | 98.2 98.2 | 0.7 0.7 | 11.2 | 11.2 |
| System off 5/25 System on 9/30 | | | | | | | | | | |
| 9/30-10/7/92 (10/1) | 7.4 7.4 7.4 7.4 | VE-13,VE-24 VE-25,VE-26 | K,B | Total VOCs PCE TCE 1,1,1-TCE | 145 140 2.8 2.5 | 2610 | 128 128 128 128 | 1.7 1.6 0.0 0.0 | 12.1 0.2 0.2 0.2 | 12.5 |
| 10/7-10/30/92 (10/15) | 15.6 15.6 | VE-13,VE-24 VE-25,VE-26 | K,B | Total VOCs PCE | 36 36 | 2610 | 128 128 | 0.4 0.4 | 6.5 | 6.5 |
| System off 10/20 System on 10/27 | | | | | | | | | | |
| 10/30-12/20/92 (11/22) | 40 40 | VE-13,VE-24 VE-25,VE-26 | K,B | Total VOCs PCE | 31 31 | 2610 | 128 128 | 0.4 0.4 | 14.4 | 14.4 |
| System off 11/16 System on 11/20 System off 11/25 System on 12/2 System off 12/20 | | | | | | | | | | |
| VOCs Removed (3/23-12/20/92) | | | | | | | | | 102.3 | 102.2 |

Note: (xx/xx) = Date sample was taken

Total VOCs = Total Volatile Organic Compounds

PCE = Tetrachloroethene

TCE = Trichloroethene

cis-DCE = cis-1,2-Dichloroethene

CB = Chlorobenzene

TABLE 8.0

CINDER PILE SVE RESULTS

| Dates | Number of Days | Extraction Risers in use | Carbon Units in use | Compounds Recovered | Sample Results (mg/m3) | Air Velocity (ft/min) | Air Flow Rate (ft3/min) | VOCs Removed (#/day) | VOCs Removed (#/period) | Total VOCs (#/period) |
|----------------------------|----------------|--------------------------|---------------------|---------------------|------------------------|-----------------------|-------------------------|----------------------|-------------------------|-----------------------|
| 4/1-4/6/92 (4/2) | 5.2 | VE-7,VE-8 | E,K | Total VOCs | 126 | 1558 | 136.0 | 1.6 | | 8.1 |
| | 5.2 | VE-9,VE-10 | | cis-DCE | 5.1 | | 136.0 | 0.1 | 0.3 | |
| | 5.2 | | | 2-CT | 3.8 | | 136.0 | 0.0 | 0.2 | |
| | 5.2 | | | CB | 3.4 | | 136.0 | 0.0 | 0.2 | |
| 4/6-4/12/92 (4/6) | 6 | VE-7,VE-8 | E,K | Total VOCs | 427 | 1580 | 137.9 | 5.4 | | 32.2 |
| | 6 | VE-9,VE-10 | | PCE | 2.8 | | 137.9 | 0.0 | 0.2 | |
| | 6 | | | cis-DCE | 4.3 | | 137.9 | 0.1 | 0.3 | |
| | 6 | | | 2-CT | 5.3 | | 137.9 | 0.1 | 0.4 | |
| | 6 | | | CB | 4.3 | | 137.9 | 0.1 | 0.3 | |
| 4/12-4/16/92 (4/13) | 4 | VE-7,VE-8 | E,K | Total VOCs | 224 | 1558 | 136.0 | 2.8 | | 11.1 |
| | 4 | VE-9,VE-10 | | PCE | 2.5 | | 136.0 | 0.0 | 0.1 | |
| | 4 | | | 1,1,1-TCA | 2.6 | | 136.0 | 0.0 | 0.1 | |
| | 4 | | | cis-DCE | 2.5 | | 136.0 | 0.0 | 0.1 | |
| | 4 | | | 2-CT | 6.7 | | 136.0 | 0.1 | 0.3 | |
| | 4 | | | CB | 3.5 | | 136.0 | 0.0 | 0.2 | |
| | 4 | | | NA | 4.2 | | 136.0 | 0.1 | 0.2 | |
| 4/16-4/30/92 (4/28) | 14 | VE-7,VE-8 | E,K | Total VOCs | 349 | 2950 | 144.6 | 4.6 | | 64.3 |
| | 14 | VE-9,VE-10 | | cis-DCE | 2.6 | | 144.6 | 0.0 | 0.5 | |
| | 14 | VE-14,VE-15 | | 2-CT | 9.1 | | 144.6 | 0.1 | 1.7 | |
| | 14 | VE-16,VE-17 | | CB | 4.8 | | 144.6 | 0.1 | 0.9 | |
| 4/30-5/15/92 (5/13) | 15 | VE-7,VE-8 | E,K | Total VOCs | 190 | 2590 | 126.9 | 2.2 | | 32.9 |
| | 15 | VE-9,VE-10 | | 2-CT | 12 | | 126.9 | 0.1 | 2.1 | |
| | 15 | VE-14,VE-15 | | CB | 5.8 | | 126.9 | 0.1 | 1.0 | |
| | 15 | VE-16,VE-17 | | PCE | 2.5 | | 126.9 | 0.0 | 0.4 | |
| 5/15-6/5/92 (5/22) | 21.4 | VE-14,VE-15 | E,K | Total VOCs | 286 | 2580 | 126.4 | 3.3 | | 70.4 |
| | 21.4 | VE-16,VE-17 | | 2-CT | 8.3 | | 126.4 | 0.1 | 2.0 | |
| | 21.4 | | | CB | 5.4 | | 126.4 | 0.1 | 1.3 | |
| | 21.4 | | | PCE | 2.5 | | 126.4 | 0.0 | 0.6 | |
| System off 6/5 - 8/19 | | | | | | | | | | |
| 8/19-8/21/92 (8/21) | 2.5 | Injecting air | E,K | Total VOCs | 391 | 2295 | 112.5 | 4.0 | | 10.0 |
| | 2.5 | VE-16 | | cis-DCE | 3.7 | | 112.5 | 0.0 | 0.1 | |
| | 2.5 | Vacuum on | | 2-CT | 7.1 | | 112.5 | 0.1 | 0.2 | |
| | 2.5 | VE-14,VE-17 | | CB | 2.8 | | 112.5 | 0.0 | 0.1 | |
| System off 8/21 | | | | | | | | | | |
| VOCs Removed (4/1-8/21/92) | | | | | | | | | 14.0 | 229.0 |

Note: (xx/xx) = Date sample was taken

Total VOCs = Total Volatile Organic Compounds

PCE = Tetrachloroethene

cis-DCE = cis-1,2-Dichloroethene

CB = Chlorobenzene

2-CT = 2-Chlorotoluene

1,1,1-TCA = 1,1,1-Trichloroethane

NA = Naphthalene

APPENDIX A
SVE SYSTEM SAMPLE RESULTS



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4699

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-49556

DATE: 12/21/92

RECEIVED
DEC 28 1992

ENVIROCON, Inc.
Livingston, Mt.

AIR ANALYSIS

Livingston/BN
140101-SG-248

Sampled 11/22/92 @ 1422

Submitted 11/24/92

Analyzed 12/04/92

Influent to Carbon TP Manway

| Constituent | mg/m ³ |
|---|-------------------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <2.5 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-49555
DATE: 12/21/92

RECEIVED
DEC 23 1992
Envirocon, Inc.
Livingston, MT

AIR ANALYSIS

Livingston/BN
140101-SG-247
Sampled 11/22/92 @ 1421
Submitted 11/24/92
Analyzed 12/04/92

*Between
Carbons
TP manways*

| Constituent | mg/m ³ |
|---|-------------------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-49554
DATE: 12/21/92

RECEIVED
DEC 28 1992
Envirocon, Inc.
Livingston, MT

AIR ANALYSIS

Livingston/BN
140101-SG-246
Sampled 11/22/92 @ 1420
Submitted 11/24/92
Analyzed 12/04/92

*Effluent to Atmosphere
TP Monways*

| <u>Constituent</u> | <u>mg/m³</u> |
|---|-------------------------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-49553
DATE: 12/21/92 da

RECEIVED
DEC 21 1992
FACILITY
ENVIRONMENTAL

AIR ANALYSIS

Livingston/BN
140101-SG-245
Sampled 11/22/92 @ 1415
Submitted 11/24/92
Analyzed 12/04/92

*Influent
to
Carbon
Electric*

| <u>Constituent</u> | <u>mg/m³</u> |
|---|-------------------------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | 41 * |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | 41 |

*Value derived from a 5X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.
COMPLETE ENVIRONMENTAL ANALYTICAL SERVICE



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-49552
DATE: 12/21/92

RECEIVED
DEC 23 1992
ENVIROCON, Inc.
Livingston, Mt.

AIR ANALYSIS

Livingston/BN
140101-SG-244
Sampled 11/22/92 @ 1414
Submitted 11/24/92
Analyzed 12/04/92

*Benson
Curbish
Electric*

| Constituent | mg/m ³ |
|---|-------------------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-49551
DATE: 12/21/92 da

RECEIVED
DEC 26 1992

ENVIROCON
LIVINGSTON

AIR ANALYSIS

Livingston/BN
140101-SG-243
Sampled 11/22/92 @ 1413
Submitted 11/24/92
Analyzed 12/04/92

| <u>Constituent</u> | <u>mg/m³</u> |
|---|-------------------------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-1489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-49550

DATE: 12/21/92

RECEIVED
DEC 23 1992
ENVIROCON, Inc.
Livingston, Mt.

AIR ANALYSIS

Livingston/BN
140101-SG-242
Sampled 11/22/92 @ 1353
Submitted 11/24/92
Analyzed 12/04/92

*Tristone
Barnes
Livingstone
Sass?*

| <u>Constituent</u> | <u>mg/m³</u> |
|---|-------------------------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | 34 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | 34 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.

**ENERGY LABORATORIES, INC.**P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489**LABORATORY REPORT****TO:** Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047**LAB NO.:** 92-49550 dup
DATE: 12/21/92 daRECEIVED
12/22/92
ENVIROCON, Inc.
Livingston, Mt.**QUALITY ASSURANCE-DUPLICATE ANALYSIS**Livingston/BN
140101-SG-242
Sampled 11/22/92 @ 1353
Submitted 11/24/92
Analyzed 12/04/92

| <u>Constituent</u> | <u>mg/m³</u> |
|---|-------------------------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | 32 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | 32 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-49549
DATE: 12/21/92 da

RECEIVED

ENVIROCON
Livingston, MT

AIR ANALYSIS

Livingston/BN
140101-SG-241

Sampled 11/22/92 @ 1352
Submitted 11/24/92
Analyzed 12/04/92

Constituent

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|------|
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-49548
DATE: 12/21/92

RECEIVED
DEC 23 1992

ENVIROCON INC
LIVINGSTON, MT

AIR ANALYSIS

Livingston/BN
140101-SG-240
Sampled 11/22/92 @ 1351
Submitted 11/24/92
Analyzed 12/04/92

*Effluent to atmosphere
formulation shop*

| Constituent | mg/m ³ |
|---|-------------------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-49547
DATE: 12/21/92 da

RECEIVED
DEC 23 1992

ENVIROCON, Inc.
Livingston, MT

AIR ANALYSIS

Livingston/BN
140101-SG-239
Sampled 11/22/92 @ 1337
Submitted 11/24/92
Analyzed 12/04/92

Influent to Calumet
In line with 5000000

| Constituent | mg/m ³ |
|---|-------------------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | 15 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | 40 * |
| 1,3-Dichlorobenzene | 4.4 |
| 1,4-Dichlorobenzene | 11 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | 2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | 5.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | 175 |

*Value derived from a 5X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.
COMPLETE ENVIRONMENTAL ANALYTICAL SERVICE



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-49546
DATE: 12/21/92 da

RECEIVED
DEC 20 1992
ENVIROCON, Inc.
Livingston, Mt.

AIR ANALYSIS

Livingston/BN
140101-SG-238
Sampled 11/22/92 @ 1336
Submitted 11/24/92
Analyzed 11/30/92

*Between
Curbons
Inhouse
SGL
Curbons*

Constituent

mg/m³

| | |
|---|------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-49545
DATE: 12/21/92

RECEIVED
DEC 23 1992

AIR ANALYSIS

Livingston/BN
140101-SG-237
Sampled 11/22/92 @ 1335
Submitted 11/24/92
Analyzed 11/30/92

*Off to Air Force
In-line
T. Sasse*
ENERGY LAB., INC.
BILLINGS, MT

Constituent

mg/m³

| | |
|---|------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | 2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.

**ENERGY LABORATORIES, INC.**P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489M 11/3
RECEIVED
NOV 1 1992**LABORATORY REPORT****TO:** Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047**LAB NO.:** 92-43787
DATE: 11/11/92 crp**AIR ANALYSIS**Livingston/BN, 140101-SG-236
Sampled 10/15/92 @ 1055
Submitted 10/20/92
Analyzed 10/29/92**CONSTITUENT****mg/m³****Purgeable Halocarbons (EPA Method 8260)**

| | |
|---------------------------|-------|
| Bromodichloromethane | < 2.5 |
| Bromoform | < 2.5 |
| Bromomethane | < 2.5 |
| Carbon tetrachloride | < 2.5 |
| Chlorobenzene | < 2.5 |
| Chloroethane | < 2.5 |
| 2-Chloroethylvinyl ether | < 2.5 |
| 2-Chlorotoluene | < 2.5 |
| Chloroform | < 2.5 |
| Chloromethane | < 2.5 |
| Dibromochloromethane | < 2.5 |
| 1,2-Dichlorobenzene | < 2.5 |
| 1,3-Dichlorobenzene | < 2.5 |
| 1,4-Dichlorobenzene | < 2.5 |
| 1,1-Dichloroethane | < 2.5 |
| 1,2-Dichloroethane | < 2.5 |
| 1,1-Dichloroethene | < 2.5 |
| cis-1,2-Dichloroethene | < 2.5 |
| trans-1,2-Dichloroethene | < 2.5 |
| 1,2-Dichloropropane | < 2.5 |
| cis-1,3-Dichloropropene | < 2.5 |
| trans-1,3-Dichloropropene | < 2.5 |
| Methylene chloride | < 2.5 |
| 1,1,2,2-Tetrachloroethane | < 2.5 |
| Tetrachloroethene | 36 |
| 1,1,1-Trichloroethane | < 2.5 |
| 1,1,2-Trichloroethane | < 2.5 |
| Trichloroethene | < 2.5 |
| Trichlorofluoromethane | < 2.5 |
| Vinyl chloride | < 2.5 |
| Dichlorodifluoromethane | < 2.5 |
| Total VOC Response | 36 |

NOTE: This analysis is equivalent to EPA Method 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-8325
FAX (406) 252-6069 • 1-800-735-4489

NOV 12 1992
ENVIROCON, Inc.
Vt.

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-43786
DATE: 11/11/92 crp

AIR ANALYSIS

Livingston/BN, 140101-SG-235

Sampled 10/15/92 @ 1054

Submitted 10/20/92

Analyzed 10/29/92

Tested
11/11/92
Lab 010

CONSTITUENT

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|------|
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Method 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-43785
DATE: 11/11/92 crp

AIR ANALYSIS

Livingston/BN, 140101-SG-234
Sampled 10/15/92 @ 1053
Submitted 10/20/92
Analyzed 10/29/92

CONSTITUENT

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|------|
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Method 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325

FAX (406) 252-6069 • 1-800-735-4489

RECEIVED
M 11/13/92
NOV 12 1992
ENVIROCON, Inc
Livingston Mt.

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-43784
DATE: 11/11/92 crp

AIR ANALYSIS

Livingston/BN, 140101-SG-233

Sampled 10/15/92 @ 1045

Submitted 10/20/92

Analyzed 10/29/92

CONSTITUENT

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|-------|
| Bromodichloromethane | < 2.5 |
| Bromoform | < 2.5 |
| Bromomethane | < 2.5 |
| Carbon tetrachloride | < 2.5 |
| Chlorobenzene | < 2.5 |
| Chloroethane | < 2.5 |
| 2-Chloroethylvinyl ether | < 2.5 |
| 2-Chlorotoluene | < 2.5 |
| Chloroform | < 2.5 |
| Chloromethane | < 2.5 |
| Dibromochloromethane | < 2.5 |
| 1,2-Dichlorobenzene | < 2.5 |
| 1,3-Dichlorobenzene | < 2.5 |
| 1,4-Dichlorobenzene | < 2.5 |
| 1,1-Dichloroethane | < 2.5 |
| 1,2-Dichloroethane | < 2.5 |
| 1,1-Dichloroethene | < 2.5 |
| cis-1,2-Dichloroethene | < 2.5 |
| trans-1,2-Dichloroethene | < 2.5 |
| 1,2-Dichloropropane | < 2.5 |
| cis-1,3-Dichloropropene | < 2.5 |
| trans-1,3-Dichloropropene | < 2.5 |
| Methylene chloride | < 2.5 |
| 1,1,2,2-Tetrachloroethane | < 2.5 |
| Tetrachloroethene | 59 * |
| 1,1,1-Trichloroethane | < 2.5 |
| 1,1,2-Trichloroethane | < 2.5 |
| Trichloroethene | < 2.5 |
| Trichlorofluoromethane | < 2.5 |
| Vinyl chloride | < 2.5 |
| Dichlorodifluoromethane | < 2.5 |
| Total VOC Response | 59 |

* Value derived from a 5x dilution.

NOTE: This analysis is equivalent to EPA Method 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

RECEIVED
11/13
1992
11/11/92
11/11/92
11/11/92

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-43783
DATE: 11/11/92 crp

AIR ANALYSIS

Livingston/BN, 140101-SG-232
Sampled 10/15/92 @ 1044
Submitted 10/20/92
Analyzed 10/29/92

CONSTITUENT

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|-------|
| Bromodichloromethane | < 2.5 |
| Bromoform | < 2.5 |
| Bromomethane | < 2.5 |
| Carbon tetrachloride | < 2.5 |
| Chlorobenzene | < 2.5 |
| Chloroethane | < 2.5 |
| 2-Chloroethylvinyl ether | < 2.5 |
| 2-Chlorotoluene | < 2.5 |
| Chloroform | < 2.5 |
| Chloromethane | < 2.5 |
| Dibromochloromethane | < 2.5 |
| 1,2-Dichlorobenzene | < 2.5 |
| 1,3-Dichlorobenzene | < 2.5 |
| 1,4-Dichlorobenzene | < 2.5 |
| 1,1-Dichloroethane | < 2.5 |
| 1,2-Dichloroethane | < 2.5 |
| 1,1-Dichloroethene | < 2.5 |
| cis-1,2-Dichloroethene | < 2.5 |
| trans-1,2-Dichloroethene | < 2.5 |
| 1,2-Dichloropropane | < 2.5 |
| cis-1,3-Dichloropropene | < 2.5 |
| trans-1,3-Dichloropropene | < 2.5 |
| Methylene chloride | < 2.5 |
| 1,1,2,2-Tetrachloroethane | < 2.5 |
| Tetrachloroethene | < 2.5 |
| 1,1,1-Trichloroethane | < 2.5 |
| 1,1,2-Trichloroethane | < 2.5 |
| Trichloroethene | < 2.5 |
| Trichlorofluoromethane | < 2.5 |
| Vinyl chloride | < 2.5 |
| Dichlorodifluoromethane | < 2.5 |
| Total VOC Response | < 30 |

NOTE: This analysis is equivalent to EPA Method 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325

FAX (406) 252-6069 • 1-800-735-4480
NOV 13 1992
RECEIVED
ENVIROCON, Inc
Livingston Mt.

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-43782
DATE: 11/11/92 crp

AIR ANALYSIS

Livingston/BN, 140101-SG-231

Sampled 10/15/92 @ 1043

Submitted 10/20/92

Analyzed 10/29/92

CONSTITUENT

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|------|
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Method 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325

FAX (406) 252-6069 • 1-800-735-4488
RECEIVED
NOV 12 1992
ENVIROCON, Inc.
Livingston, Mt.

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-43781
DATE: 11/11/92 crp

AIR ANALYSIS

Livingston/BN, 140101-SG-230

Sampled 10/15/92 @ 1005

Submitted 10/20/92

Analyzed 10/29/92

CONSTITUENT

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|-------|
| Bromodichloromethane | < 2.5 |
| Bromoform | < 2.5 |
| Bromomethane | < 2.5 |
| Carbon tetrachloride | < 2.5 |
| Chlorobenzene | < 2.5 |
| Chloroethane | < 2.5 |
| 2-Chloroethylvinyl ether | < 2.5 |
| 2-Chlorotoluene | < 2.5 |
| Chloroform | < 2.5 |
| Chloromethane | < 2.5 |
| Dibromochloromethane | < 2.5 |
| 1,2-Dichlorobenzene | < 2.5 |
| 1,3-Dichlorobenzene | < 2.5 |
| 1,4-Dichlorobenzene | < 2.5 |
| 1,1-Dichloroethane | < 2.5 |
| 1,2-Dichloroethane | < 2.5 |
| 1,1-Dichloroethene | < 2.5 |
| cis-1,2-Dichloroethene | < 2.5 |
| trans-1,2-Dichloroethene | < 2.5 |
| 1,2-Dichloropropane | < 2.5 |
| cis-1,3-Dichloropropene | < 2.5 |
| trans-1,3-Dichloropropene | < 2.5 |
| Methylene chloride | < 2.5 |
| 1,1,2,2-Tetrachloroethane | < 2.5 |
| Tetrachloroethene | 35 |
| 1,1,1-Trichloroethane | < 2.5 |
| 1,1,2-Trichloroethane | < 2.5 |
| Trichloroethene | < 2.5 |
| Trichlorofluoromethane | < 2.5 |
| Vinyl chloride | < 2.5 |
| Dichlorodifluoromethane | < 2.5 |
| Total VOC Response | 35 |

NOTE: This analysis is equivalent to EPA Method 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

RECEIVED 3

NOV 11 1992

ENVIRONMENTAL
LIVINGSTON, MT.

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-43780
DATE: 11/11/92 crp

AIR ANALYSIS

Livingston/BN, 140101-SG-229
Sampled 10/15/92 @ 1004
Submitted 10/20/92
Analyzed 10/28/92

CONSTITUENT

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|------|
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,1,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Method 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6069 • FAX (406) 252-6069 • 1-800-735-4773

REC'D
NOV 12 1992
ENVIROCON, Inc.
Livingston, Mt.

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-43780 dup
DATE: 11/11/92 crp

QUALITY ASSURANCE - DUPLICATE ANALYSIS

Livingston/BN, 140101-SG-229
Sampled 10/15/92 @ 1004
Submitted 10/20/92
Analyzed 10/28/92

CONSTITUENT

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|------|
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Method 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325 • FAX (406) 252-6069 • 1-800-735-4489

RECEIVED

ENVIROCON, Inc.
Livingston, MT

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-43779
DATE: 11/11/92 crp

AIR ANALYSIS

Livingston/BN, 140101-SG-228
Sampled 10/15/92 @ 1003
Submitted 10/20/92
Analyzed 10/28/92

CONSTITUENT

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|------|
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Method 601/8010.

**ENERGY LABORATORIES, INC.**P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-541-4199

NOV 1 1992

LABORATORY REPORT**TO:** Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047**LAB NO.:** 92-43778
DATE: 11/11/92 crp**AIR ANALYSIS**Livingston/BN, 140101-SG-227
Sampled 10/15/92 @ 0937
Submitted 10/20/92
Analyzed 10/28/92*Chloroform
1,1,1-Trichloroethane
1,1,2-Trichloroethane
1,1,2,2-Tetrachloroethane***CONSTITUENT****mg/m³****Purgeable Halocarbons (EPA Method 8260)**

| | |
|---------------------------|-------|
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | 7.1 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | 130 * |
| 1,3-Dichlorobenzene | 7.0 |
| 1,4-Dichlorobenzene | 12 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | 3.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | 253 |

* Value derived from a 5x dilution.

NOTE: This analysis is equivalent to EPA Method 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • ENVIROCON, Inc.
Livingston, MT

REC-44113
NOV 12 1992

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-43777
DATE: 11/11/92 crp

AIR ANALYSIS

Livingston/BN, 140101-SG-226
Sampled 10/15/92 @ 0936
Submitted 10/20/92
Analyzed 10/28/92

CONSTITUENT

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|------|
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | 32 * |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | 9.6 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | 3.4 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | 10 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | 55 |

* Value derived from a 5x dilution.

NOTE: This analysis is equivalent to EPA Method 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6328
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-43776
DATE: 11/11/92 crp

RECEIVED
11/13
1 2 199
ENVIROCON, Inc.
Livingston, MT

AIR ANALYSIS

Livingston/BN, 140101-SG-225
Sampled 10/15/92 @ 0935
Submitted 10/20/92
Analyzed 10/28/92

CONSTITUENT

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|------|
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Method 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
LABORATORY REPORT FAX (406) 252-6069 • 1-800-735-4489

mid 30/92

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59457

LAB NO: 92-39346
DATE: 10/27/92 af

RECEIVED

OCT 30 1992

AIR ANALYSIS

Livingston/BN, 140101-SG-224
Sampled 10/01/92 @ 1035
Submitted 10/06/92
Analyzed 10/16/92

Handwritten: *John R. ...*
Handwritten: *Man ...*
Handwritten: *S. ...*
Stamp: ENVIROCON, Inc.
Livingston, Mt.

CONSTITUENT

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|-------|
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | 140 * |
| 1,1,1-Trichloroethane | 2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | 2.8 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | 145 ✓ |

NOTE: This analysis is equivalent to EPA Methods 601/8010.

* Value derived from a 5x dilution.

**ENERGY LABORATORIES, INC.**P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489**LABORATORY REPORT****TO:** Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047**LAB NO.:** Blank
DATE: 12/21/92 da**AIR ANALYSIS**Method Blank
Analyzed 11/30/92

| <u>Constituent</u> | <u>mg/m³</u> |
|---|-------------------------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | < 2.5 |
| Bromoform | < 2.5 |
| Bromomethane | < 2.5 |
| Carbon tetrachloride | < 2.5 |
| Chlorobenzene | < 2.5 |
| Chloroethane | < 2.5 |
| 2-Chloroethylvinyl ether | < 2.5 |
| 2-Chlorotoluene | < 2.5 |
| Chloroform | < 2.5 |
| Chloromethane | < 2.5 |
| Dibromochloromethane | < 2.5 |
| 1,2-Dichlorobenzene | < 2.5 |
| 1,3-Dichlorobenzene | < 2.5 |
| 1,4-Dichlorobenzene | < 2.5 |
| 1,1-Dichloroethane | < 2.5 |
| 1,2-Dichloroethane | < 2.5 |
| 1,1-Dichloroethene | < 2.5 |
| cis-1,2-Dichloroethene | < 2.5 |
| trans-1,2-Dichloroethene | < 2.5 |
| 1,2-Dichloropropane | < 2.5 |
| cis-1,3-Dichloropropene | < 2.5 |
| trans-1,3-Dichloropropene | < 2.5 |
| Methylene chloride | < 2.5 |
| 1,1,2,2-Tetrachloroethane | < 2.5 |
| Tetrachloroethene | < 2.5 |
| 1,1,1-Trichloroethane | < 2.5 |
| 1,1,2-Trichloroethane | < 2.5 |
| Trichloroethene | < 2.5 |
| Trichlorofluoromethane | < 2.5 |
| Vinyl chloride | < 2.5 |
| Dichlorodifluoromethane | < 2.5 |
| Total VOC Response | < 30 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: Blank
DATE: 12/21/92

RECEIVED
DEC 28 1992
ENVIROCON, Inc.
LIVINGSTON, MT

AIR ANALYSIS

Method Blank
Analyzed 12/04/92

| <u>Constituent</u> | <u>mg/m³</u> |
|---|-------------------------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | < 2.5 |
| Bromoform | < 2.5 |
| Bromomethane | < 2.5 |
| Carbon tetrachloride | < 2.5 |
| Chlorobenzene | < 2.5 |
| Chloroethane | < 2.5 |
| 2-Chloroethylvinyl ether | < 2.5 |
| 2-Chlorotoluene | < 2.5 |
| Chloroform | < 2.5 |
| Chloromethane | < 2.5 |
| Dibromochloromethane | < 2.5 |
| 1,2-Dichlorobenzene | < 2.5 |
| 1,3-Dichlorobenzene | < 2.5 |
| 1,4-Dichlorobenzene | < 2.5 |
| 1,1-Dichloroethane | < 2.5 |
| 1,2-Dichloroethane | < 2.5 |
| 1,1-Dichloroethene | < 2.5 |
| cis-1,2-Dichloroethene | < 2.5 |
| trans-1,2-Dichloroethene | < 2.5 |
| 1,2-Dichloropropane | < 2.5 |
| cis-1,3-Dichloropropene | < 2.5 |
| trans-1,3-Dichloropropene | < 2.5 |
| Methylene chloride | < 2.5 |
| 1,1,2,2-Tetrachloroethane | < 2.5 |
| Tetrachloroethene | < 2.5 |
| 1,1,1-Trichloroethane | < 2.5 |
| 1,1,2-Trichloroethane | < 2.5 |
| Trichloroethene | < 2.5 |
| Trichlorofluoromethane | < 2.5 |
| Vinyl chloride | < 2.5 |
| Dichlorodifluoromethane | < 2.5 |
| Total VOC Response | < 30 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6069 • FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: Blank
DATE: 11/11/92 crp

AIR ANALYSIS

Method Blank
Analyzed 10/28/92

CONSTITUENT

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|------|
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Method 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-734-4489

LABORATORY REPORT

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: Blank
DATE: 11/11/92 crp

AIR ANALYSIS

Method Blank
Analyzed 10/29/92

CONSTITUENT

mg/m³

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|------|
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Method 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
LABORATORY REPORT FAX (406) 252-6069 • 1-800-735-4489

m 10/30/92

TO: Steve Sasse
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59457

LAB NO: Blank
DATE: 10/27/92 af

AIR ANALYSIS

Method Blank
Analyzed 10/16/92

RECEIVED

OCT 30 1992

CONSTITUENT

mg/m³

ENVIROCON, Inc.
Livingston, MT.

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|------|
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | <2.5 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

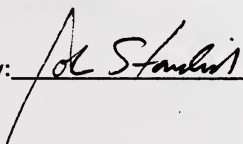
RECEIVED
DEC 28 1992
ENVIROCON, Inc.
Livingston, MT.

December 21, 1992

Steve Sasse
Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

On November 24, 1992 these samples, represented by our laboratory numbers 92-49545 to 92-49556, were submitted to our laboratory for analysis.

The test results and quality assurance were reviewed and approved by the undersigned.

Reviewed by: 



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-785-4489

RECEIVED
NOV 12 1992
ENERGY LABORATORIES, INC.
Livingston, MT

November 11, 1992

Steve Sasse
Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

On October 20, 1992, these samples, represented by our laboratory numbers 92-43776 to 92-43787, were submitted to our laboratory for analysis.

The test results and quality assurance were reviewed and approved by the undersigned.

Reviewed by:



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

m10/30/92

October 27, 1992

RECEIVED
OCT 30 1992
ENVIROCON, Inc.
Livingston, ME

Steve Sasse
Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59457

On October 6, 1992 this sample, represented by our laboratory number 92-39346, was submitted to our laboratory for analysis.

The test results and quality assurance were reviewed and approved by the undersigned.

Reviewed by:

for Standin

APPENDIX B
PHOTOIONIZATION-DETECTOR READINGS

Electric Shop

9/12/82 System check
PID Eff 0.0
Between Carbons 0.0
Comb 36

9/14/82 System check
PID Eff 0.0
Between Carbons 0.0
Comb 43

9/16/82 System check + samples
PID Eff 0.0
Between Carbons 0.0
Comb 65+

9/18/82 System check
System off when I got here,
off?

9/19/82 System check
PID Eff 3.4
Between Carbons 5.0
Comb 36+

9/20/82 System check
PID Eff 0.0
Between Carbons 0.0
Comb 46

Flows out carbon 2.750 into carbon 6.000

9/24/82 System check
PID Eff 0.0
Between Carbons 0.0
Comb 75

9/26/82 System check
PID Eff 0.4
Between Carbons 5.1
Comb 45+

9/28/82 System check
PID Eff 3.1
Between Carbons 1.0
Comb 65+

9/30/82 System check
PID Eff 0.0
Between Carbons 0.0
Comb 55

10/1/82 System check
PID Eff 0.0
Between Carbons 0.0
Comb 45+

10/4/82 System check
PID Eff 3.3
Between Carbons 5.6
Comb 57

10/6/82 System check
PID Eff 0.0
Between Carbons 0.0 Comb 57

Electric Shop

10/16/82 system check
PID Eff 0.0
Between Carbons 0.0
Comb 25

10/16/82 system check
PID Eff 0.0
Between Carbons 0.0
Comb 25

10/16/82 system check
PID Eff 0.0
Between Carbons 0.0
Comb 25

10/16/82 system check
PID Eff 0.0
Between Carbons 0.0
Comb 42

Flows into blower 2800 out carbon 2875

10/16/82 system check + samples
PID Eff 0.0
Between Carbons 0.0
Comb 41

10/16/82 system check
PID Eff 0.0
Between Carbons 0.0
Comb 25

10/16/82 shut system down @ 0620
10/16/82 start system @ 1000
1500 system check
PID Eff 0.0-3.0
Between Carbons 3.3
Comb 40

11/16/82 system check
PID Eff 0.0
Between Carbons 0.0
Comb 20

11/17/82 system check
PID Eff 2.0
Between Carbons 2.1
Comb 20

11/16/82 checked but forgot to write down
11/16/82 system check
PID Eff 3.6
Between Carbons 6.8
Comb 26

11/16/82 system check
PID Eff 2.5
Between Carbons 2.8
Comb 23

11/16/82 system check
PID Eff 3.5
Between Carbons 4.6
Comb 28

Electric Shop

11/24/82 System check samples
PID Eff 0.0
Between carbons 0.0
Comb 20

11/24/82 System check
PID Eff 1.1
Between carbons 2.8
Comb 21

11/24/82 Shot system down @ 1500
12/14/82 started system @ 1500

12/14/82 System check
PID Eff 0.0
Between carbons 1.3
Comb 20

12/14/82 System check
PID Eff 1.3
Between carbons 2.6
Comb 26

12/14/82 System check
PID Eff 2.6
Between carbons 5.2
Comb 28

12/10/82 System check
PID Eff 1.1
Between carbons .9
Comb 21

12/14/82 System check
PID Eff 0.0
Between carbons 0.0
Comb 13

12/14/82 System check
PID Eff 1.3
Between carbons 1.1
Comb 22

12/14/82 System check
PID Eff .9
Between carbons 1.9
Comb 18

12/14/82 System check
PID Eff 2.6
Between carbons 10
Comb 25

12/14/82 System check
PID Eff 1.6
Between carbons 2.0
Comb 16

12/14/82 Sometime between 20th 24th
~~12/14/82~~ system shot off left off

Locomotive Shop

10/2/12 system check
PID Eff 0.4
Between Carbons 13.0
Comb 20

10/1/12 system check
PID Eff 0.5
Between Carbons 1.3
Comb 10+

10/1/12 system check
PID Eff 0.0
Between Carbons 0.0
Comb 15+

10/1/12 system check
PID Eff 0.9
Between Carbon 10.2
Comb 20+

10/1/12 system check
PID Eff 0.0
Between Carbons 0.0
Comb 15

10/1/12 system check
PID Eff 0.0
Between Carbons 0.0
Comb 10

Flows Into Carbon 5750 out Carbons 2600

10/1/12 system check
PID Eff 0.0
Between Carbons 6.9
Comb 17+

* 10/1/12 @ 0730 Took injection blower
off line

10/1/12 system check + samples
PID Eff 0.0
Between Carbons 0.0
Comb 20

10/1/12 system check
PID Eff 0.0
Between Carbons 2.1
Comb 15

10/2/12 shut system down @ 0625

10/2/12 start system @ 10:55
system check

11/4/12 PID Eff 0.0
Between Carbons 0.0
Comb 24

11/1/12 system check
PID Eff 0.9
Between Carbons 4.8
Comb 20

Flows Into carbon 5700

out carbon 2550

Isomoline Shop

11/14/82 system check
PID Eff 3.4
Between carbons 4.5
Comb 16

11/14/82 system check
PID Eff 4.4
Between carbon 9
Comb 11

Flow out carbon 26.75

11/14/82 system check
PID Eff 3.8
Between carbons 7.9
Comb 16

11/14/82 system check
PID Eff 1.2
Between carbons 6.6
Comb 17

11/14/82 system check
PID Eff 2.0
Between carbons 3.1
Comb 18

11/14/82 system check & samples
PID Eff 0.0
Between carbons 0.0
Comb 15

11/24/82 system check
PID Eff 0.0
Between carbons 1.6
Comb 11

11/24/82 shut system down @ 1300
11/24/82 started system @ 1300

12/4/82 system check
PID Eff 0.0
Between carbons 3.5
Comb 14

12/6/82 system check
PID Eff 1.4
Between carbons 8.8
Comb 18

12/6/82 system check
PID Eff 2.1
Between carbons 2.2
Comb 11

12/6/82 system check
PID Eff 0.0
Between carbons 1.1
Comb 9

12/14/82 system check
PID Eff 1.5
Between carbons 2.5
Comb 10

Transfer Pit Manways

* 9/30/02 system start
1300 PID Eff 0.0
Between Carbons 0.0
Comb 78+

10/02 system check + sample
1300 PID Eff 0.0
Between Carbons 0.0
Comb 65+

10/02 system check
0900 PID Eff 0.0
Between Carbons 0.0
Comb 55+

10/02 system check
PID Eff 1.3
Between Carbons 3.5
Comb 20+

10/02 system check
PID Eff 0.0
Between Carbons 0.0
Comb 20+

10/02 system check
PID Eff 0.0
Between Carbons 0.0
Comb 20

10/02 system check
PID Eff 0.0
Between Carbons 0.0
Comb 20

10/02 system check
PID Eff 0.0
Between Carbons 0.0
Comb 20

10/02 system check
PID Eff 0.0
Between Carbons 0.0
Comb 32

Flows Into blower 6200 out carbons 290

10/02 system check + samples
PID Eff 0.0
Between Carbon Units 0.0
Comb 32

10/02 system check
PID Eff 0.0
Between Carbons 0.0
Comb 20

10/02 shut system down @ 06:20

10/02 start system @ 10:50

Transfer the Monkeys

11/27/92 System Check
1500 PID Eff 0.2
Between Carbons 0.0
Comb 35

11/1/92 System Check
PID Eff 0.0
Between Carbons 0.0
Comb 10

11/7/92 System Check
PID Eff 1.9
Between Carbon 2.3
Comb 15

11/14/92 checked bot forgot to write down
11/14/92 System Check
PID Eff 4.5
Between Carbons 6.8
Comb 19

11/14/92 @ 0000
11/14/92 Shut down, needed ext. cord
11/14/92 @ 0000 started system

11/21/92 System Check
PID Eff 0.0
Between Carbons 0.0
Comb 15

11/24/92 System Check
PID Eff 2.0
Between Carbons 1.8
Comb 12

~~11/23/92~~ Shut down @ 1500
11/23/92 started system @ 1500

11/14/92 System Check
PID Eff 1.0
Between Carbons 1.6
Comb 13

11/14/92 System Check
PID Eff 1.1
Between Carbons 3.8
Comb 12

11/14/92 System Check
PID Eff 1.5
Between Carbons 3.2
Comb 14

11/14/92 System Check
PID Eff 1.8
Between Carbon 4.1
Comb 15

11/14/92 System Check
PID Eff 2.2
Between Carbons 0.0
Comb 10

Transfer Pit Drawings

12/14/02 system check
PID Eff 0.0
Between carbons 1.0
Comb 9

12/14/02 system check
PID Eff 1.1
Between carbons .9
Comb 11

12/18/02 system check
PID Eff .8
Between carbons .9
Comb 12

12/20/02 system check
PID Eff 0.0
Between carbons 0.0
Comb 11

12/24/02 got shot off some time
between 20th 24th

In-line Unit Chamber

10/14/82 system check
PID Eff 3.9
Between carbons 10
Comb 245

* Flows Out carbon 2400 In to carbons 4200
VE Tank 400 f/m

10/14/82 system check
PID Eff 3.8
Between carbons 6.8
Comb 270+

10/14/82 system check
PID Eff 4.7
Between carbon 104
Comb 215+

10/14/82 system check
PID Eff 4.8
Between carbons 13.4
Comb 318

10/14/82 system check
PID Eff 0.0
Between carbons 182
Comb 285

10/14/82 system check
PID Eff 3.2
Between carbons 23
Comb 226

10/14/82 system check
PID Eff 3.9
Between carbons 12.2
Comb 226

10/14/82 system check
PID Eff 0.0
Between carbons 43
Comb 200+

10/14/82 system check
PID Eff 3.6
Between carbons 32
Comb 247

10/14/82 system check
PID Eff 0.0
Between carbons 47
Comb 275

10/14/82 system check
PID Eff 0.0
Between carbons 43
Comb 285

10/14/82 system check
PID Eff 0.0
Between carbons 10.0
Comb 185

* Flows In to carbons 4250
VE Tank 300-500
Out Carbon 270

10/15/12 Guyton 6beck & samples
PID Eff 6.0 humid
Between carbons 35
Conib 289

10/17/20 Shift System Off Breakthrough
11:20 Between Carbon 75 ppm

10/2/92 Start system with carbon units
~~also~~ ~~the~~ ~~SM~~ inline IFC
 x VE 6,22 running

11/12/22 system check
P.D. left 3:38
Between carbon 101
comb 260

11/17/02 system check
PID Eff 3.0
Between carbons 3.1
comb 130

W472 system check
PID # 323
Between carbon 20 ft
Comp 140

11/14/03 system sheet
Pile # 28
Between Capton 67
Comb B35
Along O. St. Capton 2050

11/4/02 System Check
PID Eff 4.5
Between carbons 3.9
Comb 140

Water System Check
PID Eff 4.8
Between Carbons 10.1
Comb 141

11/22/25 system deck
p/d off 2.7
Between Car ports 1.8
Comp 1.2D

11/26/02 system check
PID Eff. 0.0
Between carbons 1.08
Comp 1.28

11/24/22 shut system down @ 1500
~~11/24/22~~ started system @ ~~1500~~

127th shut system down @ 1600
Not working right

APPENDIX C
SVE WELL LOGS

ENVIROCON WELL LOG

Page 1 of 1

Well: VE-39

Project: LRY

Owner: BN

Location: WORP

Project No: 140101

Diameter: 6"

Date Drilled: 11/20/92 Total Depth: 19'-11"

Initial WL:

Surface Elev:

Elevation TOC:

Slot Size: 040

Screen Dia: 4"

Length: 10'

Type: PVC

Casing Dia: 4"


Length: 10'

Drilling Co: PC EXPL. Drilling Method: AIR ROTARY

Driller: CLAYTON
SHIELDS

Logged By: STEVE SASSE

SKETCH MAP

| DEPTH (ft) | WELL CONST. | SPT (blows/ft) | PID READING | SAMPLE NUMBER | GRAPHIC LOG | DESCRIPTION/SOIL CLASSIFICATION (Color, Texture, Structures) |
|---------------|----------------------|-------------------|----------------|---------------------------|---|---|
| 5 | BENT CHIPS GRAVEL | | HS= 1.5 | 140101- SO-406 @10' |  | 0-20' DAMP SANDY GRAVEL |
| 10 | | | | | | |
| 15 | | | | | | |
| 20 | TD= 19.9' | | HS= 2.8 | 140101- SO-407 @20' | | |
| 25 | | | | | | |
| 30 | | | | | | |
| 35 | | | | | | |
| 40 | | | | | | |
| 45 | | | | | | |

ENVIROCON WELL LOG

Page 1 of 1

Well: VE-40

Project: LRY

Owner: BN

Location: Elec.Shop

Project No: 140101

Diameter: 6"

Date Drilled: 11/20/92

Total Depth: 19'-9"

Initial WL:

Surface Elev:

Elevation TOC:

Slot Size: 040

Screen Dia: 4"

Length: 10'

Type: PVC

Casing Dia: 4"

Length: 10'

Drilling Co: PC EXPL. Drilling Method: AIR ROTARY

Driller: CLAYTON
SHIELDS

Logged By: STEVE SASSE

SKETCH MAP

| DEPTH (ft) | WELL CONST. | SPT (blows/ft) | PID READING | SAMPLE NUMBER | GRAPHIC LOG | DESCRIPTION/SOIL CLASSIFICATION (Color, Texture, Structures) |
|---------------|----------------------|-------------------|----------------|------------------|----------------|---|
| 5 | BENT CHIPS GRAVEL | | | | | 0-3' FILL |
| 10 | | | | | | 3'-8' MEDIUM SAND |
| 15 | | | | | | 8'-19'9" SANDY GRAVEL |
| 20 | TD = 19.75' | | | | | |
| 25 | | | | | | |
| 30 | | | | | | |
| 35 | | | | | | |
| 40 | | | | | | |
| 45 | | | | | | |

ENVIROCON WELL LOG

Page 1 of 1

Well: VE-41

Project: LRY

Owner: BN

Location: TRAN. PIT

Project No: 140101

Diameter: 6"

Date Drilled: 11/20/92

Total Depth: 17'

Initial WL:

Surface Elev:

Elevation TOC:

Slot Size: 040

Screen Dia: 4"

Length: 10'

Type: PVC

Casing Dia: 4"

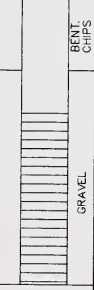

Length: 10'

Drilling Co: PC EXPL. Drilling Method: AIR ROTARY

Driller: CLAYTON
SHIELDS

Logged By: JOHN MILLS

SKETCH MAP

| DEPTH (ft) | WELL CONST. | SPT (blows/ft) | PID READING | SAMPLE NUMBER | GRAPHIC LOG | DESCRIPTION/SOIL CLASSIFICATION (Color, Texture, Structures) |
|---------------|---|-------------------|----------------|------------------|---|---|
| 5 |  | | | |  | 0-2' FILL |
| 10 | | | | | | 2'-7' CLAY-CINDERS |
| 15 | | | | | | 7'-20' SAND+GRAVEL |
| 20 | | | | | | |
| 25 | | | | | | |
| 30 | TD=17' | | | | | |
| 35 | | | | | | |
| 40 | | | | | | |
| 45 | | | | | | |
| | | | | | | |

ENVIROCON WELL LOG

Page 1 of 1

Well: VE-42

Project: LRY

Owner: BN

Location: TRANS. PIT

Project No: 140101

Diameter: 6"

Date Drilled: 11/20/92

Total Depth: 16'

Initial WL:

Surface Elev:

Elevation TOC:

Slot Size: 040

Screen Dia: 4"

Length: 10'

Type: PVC

Casing Dia: 4"

Length: 10'

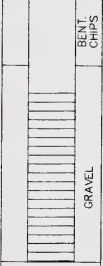

Drilling Co: PC EXPL.

Drilling Method: AIR ROTARY

Driller: CLAYTON
SHIELDS

Logged By: JOHN MILLS

SKETCH MAP

| DEPTH (ft) | WELL CONST. | SPT (blows/ft) | PID READING | SAMPLE NUMBER | GRAPHIC LOG | DESCRIPTION/SOIL CLASSIFICATION (Color, Texture, Structures) |
|---------------|---|-------------------|----------------|------------------|---|---|
| 5 |  | | | |  | 0-16' SANDY GRAVEL |
| 10 | | | | | | |
| 15 | | | | | | |
| 20 | | | | | | |
| 25 | | | | | | |
| 30 | | | | | | |
| 35 | | | | | | |
| 40 | | | | | | |
| 45 | | | | | | |

ENVIROCON WELL LOG

Page 1 of 1

Well: VE-43

Project: LRY

Owner: BN

Location: TRANS. PIT Project No: 140101

Diameter:

Date Drilled: 11/20/92 Total Depth: 16'-3"

Initial WL:

Surface Elev:

Elevation TOC:

Slot Size: 040

Screen Dia: 4"

Length:

Type: PVC

Casing Dia: 4"

Length: 10'


Drilling Co: PC EXPL.

Drilling Method:

Driller: CLAYTON
SHIELDS

Logged By: JOHN MILLS

SKETCH MAP

| DEPTH (ft) | WELL CONST. | SPT (blows/ft) | PID READING | SAMPLE NUMBER | GRAPHIC LOG | DESCRIPTION/SOIL CLASSIFICATION (Color, Texture, Structures) |
|---------------|------------------------------|-------------------|----------------|------------------|---|---|
| 5 | BENT. CHIPS GRAVEL | | | |  | 0-16' SANDY GRAVEL |
| 10 | | | | | | |
| 15 | | | | | | |
| 16.25 | | | | | | |
| 20 | | | | | | |
| 25 | | | | | | |
| 30 | | | | | | |
| 35 | | | | | | |
| 40 | | | | | | |
| 45 | | | | | | |

ENVIROCON WELL LOG

Page 1 of 1

Well: VE-44

Project: LRY

Owner: BN

Location: MRL Shop

Project No: 140101

Diameter: 6"

Date Drilled: 12/9/92

Total Depth: 19'

Initial WL:

Surface Elev:

Elevation TOC:

Slot Size: .040

Screen Dia: 4"

Length: 15'

Type: PVC

Casing Dia: 4"

Length: 4'

Drilling Co: PC EXPL.

Drilling Method: AIR ROTARY

Driller: CLAYTON
SHIELDS

Logged By: MIKE KROTT

SKETCH MAP

| DEPTH (ft) | WELL CONST. | SPT (blows/ft) | PID READING | SAMPLE NUMBER | GRAPHIC LOG | DESCRIPTION/SOIL CLASSIFICATION (Color, Texture, Structures) |
|---------------|----------------|-------------------|----------------|----------------------------|----------------|---|
| 0 | | | | | | 0'-1' CONCRETE |
| 5 | | | HS= 10 | | | |
| 10 | | | HS= 15 | 140101- SO-408 @ 10' | | 1'-19' SANDY GRAVEL |
| 15 | | | HS= 11.5 | | | |
| 20 | TD=19' | | HS= 88.6 | 140101- SO-409 @ 18' | | |
| 25 | | | | | | |
| 30 | | | | | | |
| 35 | | | | | | |
| 40 | | | | | | |
| 45 | | | | | | |

ENVIROCON WELL LOG

Page 1 of 1

Well: VE-45

Project: LRY

Owner: BN

Location: MRL Shop

Project No: 140101

Diameter: 6"

Date Drilled: 12/9/92

Total Depth: 15'

Initial WL:

Surface Elev:

Elevation TOC:

Slot Size:

Screen Dia:

Length:

Type:

Casing Dia:

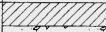

Length:

Drilling Co: PC EXPL. Drilling Method: AIR ROTARY

Driller: CLAYTON
SHIELDS

Logged By: MIKE KROTT

SKETCH MAP

| DEPTH (ft) | WELL CONST. | SPT (blows/ft) | PID READING | SAMPLE NUMBER | GRAPHIC LOG | DESCRIPTION/SOIL CLASSIFICATION (Color, Texture, Structures) |
|---------------|----------------|-------------------|----------------|----------------------------|---|---|
| — 5 | | | HS= 28.5 | |  | 0'-1' CONCRETE |
| — 10 | | | HS= 14 | 140101- SO-410 @ 10' |  | 1'-15' SANDY GRAVEL |
| — 15 | | | | | | LOST WELL AT 15' NO COMPLETION |
| — 20 | | | | | | |
| — 25 | | | | | | |
| — 30 | | | | | | |
| — 35 | | | | | | |
| — 40 | | | | | | |
| — 45 | | | | | | |

ENVIROCON WELL LOG

Page 1 of 1

Well: VE-46

Project: LRY

Owner: BN

Location: MRL Shop

Project No: 140101

Diameter: 6"

Date Drilled: 12/9/92

Total Depth: 19.5'

Initial WL:

Surface Elev:

Elevation TOC:

Slot Size: .040

Screen Dia: 4"

Length: 15'

Type: PVC

Casing Dia: 4"

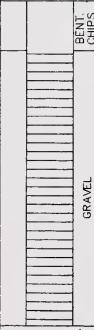

Length: 4'

Drilling Co: PC EXPL. Drilling Method: AIR ROTARY

Driller: CLAYTON
SHIELDS

Logged By: MIKE KROTT

SKETCH MAP

| DEPTH (ft) | WELL CONST. | SPT (blows/ft) | PID READING | SAMPLE NUMBER | GRAPHIC LOG | DESCRIPTION/SOIL CLASSIFICATION (Color, Texture, Structures) |
|---------------|---|-------------------|----------------|------------------|---|---|
| — 5 |  | | | |  | 0'-1' CONCRETE |
| — 10 | | | | | | |
| — 15 | | | HS= 42.3 | | | |
| — 20 | | | HS= 36.4 | | | |
| — 25 | | | | | | |
| — 30 | | | | | | |
| — 35 | | | | | | |
| — 40 | | | | | | |
| — 45 | | | | | | |

ENVIROCON WELL LOG

Page 1 of 1

Well: VE-47

Project: LRY

Owner: BN

Location: MRL Shop

Project No: 140101

Diameter: 6"

Date Drilled: 12/9/92

Total Depth: 18.4'

Initial WL:

Surface Elev:

Elevation TOC:

Slot Size: .040

Screen Dia: 4"

Length: 14.4'

Type: PVC

Casing Dia: 4"

Length: 4'



Drilling Co: PC EXPL.

Drilling Method: AIR ROTARY

Driller: CLAYTON
SHIELDS

Logged By: MIKE KROTT

SKETCH MAP

| DEPTH (ft) | WELL CONST. | SPT (blows/ft) | PID READING | SAMPLE NUMBER | GRAPHIC LOG | DESCRIPTION/SOIL CLASSIFICATION (Color, Texture, Structures) |
|---------------|---|-------------------|----------------|----------------------------|---|---|
| 5 |  | | HS= 35 | 140101- SO-411 @ 10' |  | 0'-1' CONCRETE |
| 10 | | | HS= 61.3 | | | 1'-18.4' SANDY GRAVEL |
| 15 | | | HS= 24.5 | | | |
| 20 | | TD=18.4' | HS= 21.7 | | | |
| 25 | | | | | | |
| 30 | | | | | | |
| 35 | | | | | | |
| 40 | | | | | | |
| 45 | | | | | | |

APPENDIX D
SOIL SAMPLE RESULTS



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-51595
DATE: 12/22/92 da
REVISED: 12/29/92 ag

SOIL ANALYSIS

Livingston/BN
140101-SO-411, VE-47, 10'
Sampled 12/09/92 @ 2000
Submitted 12/16/92
Analyzed 12/16/92

RECEIVED
DEC 23 1992
ENVIROCON
LIVINGSTON, MT

| Constituent | µg/kg |
|--|-------|
| Purgeable Halocarbons(EPA Method 8260) | |
| Bromodichloromethane | < 200 |
| Bromoform | < 200 |
| Bromomethane | < 200 |
| Carbon tetrachloride | < 200 |
| Chlorobenzene | 360 |
| Chloroethane | < 200 |
| 2-Chloroethylvinyl ether | < 200 |
| 2-Chlorotoluene | 1800 |
| Chloroform | < 200 |
| Chloromethane | < 200 |
| Dibromochloromethane | < 200 |
| 1,2-Dichlorobenzene | 1000 |
| 1,3-Dichlorobenzene | < 200 |
| 1,4-Dichlorobenzene | 560 |
| 1,1-Dichloroethane | < 200 |
| 1,2-Dichloroethane | < 200 |
| 1,1-Dichloroethene | < 200 |
| cis-1,2-Dichloroethene | < 200 |
| trans-1,2-Dichloroethene | < 200 |
| 1,2-Dichloropropane | < 200 |
| cis-1,3-Dichloropropene | < 200 |
| trans-1,3-Dichloropropene | < 200 |
| Methylene chloride | < 200 |
| 1,1,2,2-Tetrachloroethane | < 200 |
| Tetrachloroethene | < 200 |
| 1,1,1-Trichloroethane | < 200 |
| 1,1,2-Trichloroethane | < 200 |
| Trichloroethene | < 200 |
| Trichlorofluoromethane | < 200 |
| Vinyl chloride | < 200 |
| Dichlorodifluoromethane | < 200 |



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-51594
DATE: 12/22/92 da

SOIL ANALYSIS

Livingston/BN
140101-SO-410, VE-45, 10'
Sampled 12/09/92 @ 1630
Submitted 12/16/92
Analyzed 12/17/92

Envirocon, Inc.
Livingston, MT

| <u>Constituent</u> | <u>µg/kg</u> |
|--|--------------|
| Purgeable Halocarbons(EPA Method 8260) | |
| Bromodichloromethane | <5.0 |
| Bromoform | <5.0 |
| Bromomethane | <5.0 |
| Carbon tetrachloride | <5.0 |
| Chlorobenzene | <5.0 |
| Chloroethane | <5.0 |
| 2-Chloroethylvinyl ether | <5.0 |
| 2-Chlorotoluene | <5.0 |
| Chloroform | <5.0 |
| Chloromethane | <5.0 |
| Dibromochloromethane | <5.0 |
| 1,2-Dichlorobenzene | <5.0 |
| 1,3-Dichlorobenzene | <5.0 |
| 1,4-Dichlorobenzene | <5.0 |
| 1,1-Dichloroethane | <5.0 |
| 1,2-Dichloroethane | <5.0 |
| 1,1-Dichloroethene | <5.0 |
| cis-1,2-Dichloroethene | <5.0 |
| trans-1,2-Dichloroethene | <5.0 |
| 1,2-Dichloropropane | <5.0 |
| cis-1,3-Dichloropropene | <5.0 |
| trans-1,3-Dichloropropene | <5.0 |
| Methylene chloride | <5.0 |
| 1,1,2,2-Tetrachloroethane | <5.0 |
| Tetrachloroethene | <5.0 |
| 1,1,1-Trichloroethane | <5.0 |
| 1,1,2-Trichloroethane | <5.0 |
| Trichloroethene | <5.0 |
| Trichlorofluoromethane | <5.0 |
| Vinyl chloride | <5.0 |
| Dichlorodifluoromethane | <5.0 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-51593
DATE: 12/22/92 da

SOIL ANALYSIS

Livingston/BN
140101-SO-409, VE-44, 18'
Sampled 12/09/92 @ 1530
Submitted 12/16/92
Analyzed 12/16/92

| <u>Constituent</u> | <u>µg/kg</u> |
|--|--------------|
| Purgeable Halocarbons(EPA Method 8260) | |
| Bromodichloromethane | < 200 |
| Bromoform | < 200 |
| Bromomethane | < 200 |
| Carbon tetrachloride | < 200 |
| Chlorobenzene | < 200 |
| Chloroethane | < 200 |
| 2-Chloroethylvinyl ether | < 200 |
| 2-Chlorotoluene | < 200 |
| Chloroform | < 200 |
| Chloromethane | < 200 |
| Dibromochloromethane | < 200 |
| 1,2-Dichlorobenzene | < 200 |
| 1,3-Dichlorobenzene | < 200 |
| 1,4-Dichlorobenzene | < 200 |
| 1,1-Dichloroethane | < 200 |
| 1,2-Dichloroethane | < 200 |
| 1,1-Dichloroethene | < 200 |
| cis-1,2-Dichloroethene | < 200 |
| trans-1,2-Dichloroethene | < 200 |
| 1,2-Dichloropropane | < 200 |
| cis-1,3-Dichloropropene | < 200 |
| trans-1,3-Dichloropropene | < 200 |
| Methylene chloride | < 200 |
| 1,1,2,2-Tetrachloroethane | < 200 |
| Tetrachloroethene | < 200 |
| 1,1,1-Trichloroethane | < 200 |
| 1,1,2-Trichloroethane | < 200 |
| Trichloroethene | < 200 |
| Trichlorofluoromethane | < 200 |
| Vinyl chloride | < 200 |
| Dichlorodifluoromethane | < 200 |

NOTE: Practical quantitation limit reflects a use of the purge and trap high concentration extraction method. The extraction method was used due to non-target compound sample matrix interference. This analysis is equivalent to EPA Methods 601/8010.

COMPLETE ENVIRONMENTAL ANALYTICAL SERVICE



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-51592
DATE: 12/22/92 da

SOIL ANALYSIS

Livingston/BN
140101-SO-408, VE-44, 10'
Sampled 12/09/92 @ 1500
Submitted 12/16/92
Analyzed 12/17/92

RECEIVED
12/22/92
ENVIROCON, INC.
Livingston, Mt.

| <u>Constituent</u> | <u>ug/kg</u> |
|--|--------------|
| Purgeable Halocarbons(EPA Method 8260) | |
| Bromodichloromethane | <5.0 |
| Bromoform | <5.0 |
| Bromomethane | <5.0 |
| Carbon tetrachloride | <5.0 |
| Chlorobenzene | <5.0 |
| Chloroethane | <5.0 |
| 2-Chloroethylvinyl ether | <5.0 |
| 2-Chlorotoluene | <5.0 |
| Chloroform | <5.0 |
| Chloromethane | <5.0 |
| Dibromochloromethane | <5.0 |
| 1,2-Dichlorobenzene | <5.0 |
| 1,3-Dichlorobenzene | <5.0 |
| 1,4-Dichlorobenzene | <5.0 |
| 1,1-Dichloroethane | <5.0 |
| 1,2-Dichloroethane | <5.0 |
| 1,1-Dichloroethene | <5.0 |
| cis-1,2-Dichloroethene | <5.0 |
| trans-1,2-Dichloroethene | <5.0 |
| 1,2-Dichloropropane | <5.0 |
| cis-1,3-Dichloropropene | <5.0 |
| trans-1,3-Dichloropropene | <5.0 |
| Methylene chloride | <5.0 |
| 1,1,2,2-Tetrachloroethane | <5.0 |
| Tetrachloroethene | <5.0 |
| 1,1,1-Trichloroethane | <5.0 |
| 1,1,2-Trichloroethane | <5.0 |
| Trichloroethene | <5.0 |
| Trichlorofluoromethane | <5.0 |
| Vinyl chloride | <5.0 |
| Dichlorodifluoromethane | <5.0 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

RECEIVED
16
4/12/92

TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LABORATORY REPORT

LAB NO: 92-49542
DATE: 12/17/92 ag

SOIL ANALYSIS

Livingston/BN, 140101-SO-407
Sampled 11/20/92
Submitted 11/24/92
Analyzed 12/02/92

WGP
VE-39 @ 20

CONSTITUENT

ug/g

| | |
|---|-------|
| Purgeable Halocarbons (EPA Method 8260) | |
| Bromodichloromethane | <0.20 |
| Bromoform | <0.20 |
| Bromomethane | <0.20 |
| Carbon tetrachloride | <0.20 |
| Chlorobenzene | <0.20 |
| Chloroethane | <0.20 |
| 2-Chloroethylvinyl ether | <0.20 |
| 2-Chlorotoluene | <0.20 |
| Chloroform | <0.20 |
| Chloromethane | <0.20 |
| Dibromochloromethane | <0.20 |
| 1,2-Dichlorobenzene | <0.20 |
| 1,3-Dichlorobenzene | <0.20 |
| 1,4-Dichlorobenzene | <0.20 |
| 1,1-Dichloroethane | <0.20 |
| 1,2-Dichloroethane | <0.20 |
| 1,1-Dichloroethene | <0.20 |
| cis-1,2-Dichloroethene | <0.20 |
| trans-1,2-Dichloroethene | <0.20 |
| 1,2-Dichloropropane | <0.20 |
| cis-1,3-Dichloropropene | <0.20 |
| trans-1,3-Dichloropropene | <0.20 |
| Methylene chloride | <0.20 |
| 1,1,2,2-Tetrachloroethane | <0.20 |
| Tetrachloroethene | 1.5 |
| 1,1,1-Trichloroethane | <0.20 |
| 1,1,2-Trichloroethane | <0.20 |
| Trichloroethene | <0.20 |
| Trichlorofluoromethane | <0.20 |
| Vinyl chloride | <0.20 |
| Dichlorodifluoromethane | <0.20 |

This analysis is equivalent to EPA Methods 601/8010.

REMARKS: The samples were analyzed using both the high concentration extraction method and the direct insertion method. The levels of tetrachloroethene detected with these two methods were not consistent in that the levels with the high concentration extraction method were much higher than those with the direct insertion method. Due to this, the values obtained using the high concentration extraction method are reported.

**ENERGY LABORATORIES, INC.**P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-551-4489**LABORATORY REPORT**TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047LAB NO: 92-49541
DATE: 12/17/92 agRECEIVED
DEC 17 1992
Envirocon, Inc.
Livingston, MTSOIL ANALYSISLivingston/BN, 140101-SO-406
Sampled 11/20/92 @ 1359
Submitted 11/24/92
Analyzed 12/02/92WTRP
VE 39@10'CONSTITUENTug/g

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|-------|
| Bromodichloromethane | <0.20 |
| Bromoform | <0.20 |
| Bromomethane | <0.20 |
| Carbon tetrachloride | <0.20 |
| Chlorobenzene | <0.20 |
| Chloroethane | <0.20 |
| 2-Chloroethylvinyl ether | <0.20 |
| 2-Chlorotoluene | <0.20 |
| Chloroform | <0.20 |
| Chloromethane | <0.20 |
| Dibromochloromethane | <0.20 |
| 1,2-Dichlorobenzene | <0.20 |
| 1,3-Dichlorobenzene | <0.20 |
| 1,4-Dichlorobenzene | <0.20 |
| 1,1-Dichloroethane | <0.20 |
| 1,2-Dichloroethane | <0.20 |
| 1,1-Dichloroethene | <0.20 |
| cis-1,2-Dichloroethene | <0.20 |
| trans-1,2-Dichloroethene | <0.20 |
| 1,2-Dichloropropane | <0.20 |
| cis-1,3-Dichloropropene | <0.20 |
| trans-1,3-Dichloropropene | <0.20 |
| Methylene chloride | <0.20 |
| 1,1,2,2-Tetrachloroethane | <0.20 |
| Tetrachloroethene | 0.22 |
| 1,1,1-Trichloroethane | <0.20 |
| 1,1,2-Trichloroethane | <0.20 |
| Trichloroethene | <0.20 |
| Trichlorofluoromethane | <0.20 |
| Vinyl chloride | <0.20 |
| Dichlorodifluoromethane | <0.20 |

This analysis is equivalent to EPA Methods 601/8010.

REMARKS: The samples were analyzed using both the high concentration extraction method and the direct insertion method. The levels of tetrachloroethene detected with these two methods were not consistent in that the levels with the high concentration extraction method were much higher than those with the direct insertion method. Due to this, the values obtained using the high concentration extraction method are reported.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO: Blank
DATE: 12/17/92 ag

SOIL ANALYSIS

Method Blank
Analyzed 12/01/92

RECEIVED

1992

ENVIROCON, Inc.
Livingston, Mt.

CONSTITUENT

ug/g

Purgeable Halocarbons (EPA Method 8260)

| | |
|---------------------------|-------|
| Bromodichloromethane | <0.20 |
| Bromoform | <0.20 |
| Bromomethane | <0.20 |
| Carbon tetrachloride | <0.20 |
| Chlorobenzene | <0.20 |
| Chloroethane | <0.20 |
| 2-Chloroethylvinyl ether | <0.20 |
| 2-Chlorotoluene | <0.20 |
| Chloroform | <0.20 |
| Chloromethane | <0.20 |
| Dibromochloromethane | <0.20 |
| 1,2-Dichlorobenzene | <0.20 |
| 1,3-Dichlorobenzene | <0.20 |
| 1,4-Dichlorobenzene | <0.20 |
| 1,1-Dichloroethane | <0.20 |
| 1,2-Dichloroethane | <0.20 |
| 1,1-Dichloroethene | <0.20 |
| cis-1,2-Dichloroethene | <0.20 |
| trans-1,2-Dichloroethene | <0.20 |
| 1,2-Dichloropropane | <0.20 |
| cis-1,3-Dichloropropene | <0.20 |
| trans-1,3-Dichloropropene | <0.20 |
| Methylene chloride | <0.20 |
| 1,1,2,2-Tetrachloroethane | <0.20 |
| Tetrachloroethene | <0.20 |
| 1,1,1-Trichloroethane | <0.20 |
| 1,1,2-Trichloroethane | <0.20 |
| Trichloroethene | <0.20 |
| Trichlorofluoromethane | <0.20 |
| Vinyl chloride | <0.20 |
| Dichlorodifluoromethane | <0.20 |

This analysis is equivalent to EPA Methods 601/8010.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-49541
DATE: 12/17/92
ENVIROCON, Inc.
Livingston, MT

RECEIVED
DEC 15 1992

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

| <u>Compound</u> | <u>Spike Added, ug/g</u> | <u>Sample Concentration ug/g</u> | <u>MS Concentration ug/g</u> | <u>MS % Rec. #</u> | <u>QC Limits Rec., %</u> |
|--------------------|--------------------------|----------------------------------|------------------------------|--------------------|--------------------------|
| 1,1-Dichloroethene | 1.0 | <0.20 | 0.96 | 96 | 60-140 |
| Trichloroethene | 1.0 | <0.20 | 0.94 | 94 | 60-140 |
| Benzene | 1.0 | <0.20 | 0.92 | 92 | 60-140 |
| Toluene | 1.0 | <0.20 | 0.88 | 88 | 60-140 |
| Chlorobenzene | 1.0 | <0.20 | 0.94 | 94 | 60-140 |

| <u>Compound</u> | <u>Spike Added ug/g</u> | <u>MSD Concentration ug/g</u> | <u>MSD % Rec. #</u> | <u>% RPD #</u> | <u>QC Limits, RPD, % Rec., %</u> |
|--------------------|-------------------------|-------------------------------|---------------------|----------------|----------------------------------|
| 1,1-Dichloroethene | 1.0 | 0.82 | 82 | 16 | 22 60-140 |
| Trichloroethene | 1.0 | 0.90 | 90 | 4.3 | 24 60-140 |
| Benzene | 1.0 | 0.90 | 90 | 2.2 | 21 60-140 |
| Toluene | 1.0 | 0.86 | 86 | 2.3 | 21 60-140 |
| Chlorobenzene | 1.0 | 0.94 | 94 | 0 | 21 60-140 |

Column to be used to flag recovery and RPD values with an asterisk.

**ENERGY LABORATORIES, INC.**

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-49541-42
DATE: 12/17/92 ag

SOIL VOLATILE SURROGATE RECOVERY

2.0 µg/g Surrogate Standard Spike

| <u>SAMPLE NO.</u> | -----% recovery----- | | |
|-------------------|----------------------------|----------------------------|----------------------------|
| | <u>S1</u> <u>(TOL)#</u> | <u>S2</u> <u>(BFB)#</u> | <u>S3</u> <u>(DCE)#</u> |
| 92-49541 | 91 | 95 | 91 |
| 92-49542 | 95 | 95 | 89 |
| Blank | 94 | 98 | 89 |

S1 (TOL) = Toluene-d8
S2 (BFB) = Bromofluorobenzene
S3 (DCE) = 1,2-Dichloroethane-d4

QC LIMITS, % Recovery

75-120
75-120
70-120

#Column to be used to flag recovery values with an asterisk.

RECEIVED

DEC 18 1992

Envirocon, Inc.
Livingston, Mt.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: Blank
DATE: 12/22/92 da

SOIL ANALYSIS

Method Blank I
Analyzed 12/17/92

| <u>Constituent</u> | <u>µg/kg</u> |
|--|--------------|
| Purgeable Halocarbons(EPA Method 8260) | |
| Bromodichloromethane | < 5.0 |
| Bromoform | < 5.0 |
| Bromomethane | < 5.0 |
| Carbon tetrachloride | < 5.0 |
| Chlorobenzene | < 5.0 |
| Chloroethane | < 5.0 |
| 2-Chloroethylvinyl ether | < 5.0 |
| 2-Chlorotoluene | < 5.0 |
| Chloroform | < 5.0 |
| Chloromethane | < 5.0 |
| Dibromochloromethane | < 5.0 |
| 1,2-Dichlorobenzene | < 5.0 |
| 1,3-Dichlorobenzene | < 5.0 |
| 1,4-Dichlorobenzene | < 5.0 |
| 1,1-Dichloroethane | < 5.0 |
| 1,2-Dichloroethane | < 5.0 |
| 1,1-Dichloroethene | < 5.0 |
| cis-1,2-Dichloroethene | < 5.0 |
| trans-1,2-Dichloroethene | < 5.0 |
| 1,2-Dichloropropane | < 5.0 |
| cis-1,3-Dichloropropene | < 5.0 |
| trans-1,3-Dichloropropene | < 5.0 |
| Methylene chloride | < 5.0 |
| 1,1,2,2-Tetrachloroethane | < 5.0 |
| Tetrachloroethene | < 5.0 |
| 1,1,1-Trichloroethane | < 5.0 |
| 1,1,2-Trichloroethane | < 5.0 |
| Trichloroethene | < 5.0 |
| Trichlorofluoromethane | < 5.0 |
| Vinyl chloride | < 5.0 |
| Dichlorodifluoromethane | < 5.0 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.

RECEIVED
DEC 22 1992
ENVIRONMENTAL
LABORATORY



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: Blank
DATE: 12/22/92 da

SOIL ANALYSIS

Method Blank II
Analyzed 12/16/92

RECEIVED
DEC 23 1992
ENVIROCON, Inc.
Livingston, MT

| <u>Constituent</u> | <u>ug/kg</u> |
|--|--------------|
| Purgeable Halocarbons(EPA Method 8260) | |
| Bromodichloromethane | < 200 |
| Bromoform | < 200 |
| Bromomethane | < 200 |
| Carbon tetrachloride | < 200 |
| Chlorobenzene | < 200 |
| Chloroethane | < 200 |
| 2-Chloroethylvinyl ether | < 200 |
| 2-Chlorotoluene | < 200 |
| Chloroform | < 200 |
| Chloromethane | < 200 |
| Dibromochloromethane | < 200 |
| 1,2-Dichlorobenzene | < 200 |
| 1,3-Dichlorobenzene | < 200 |
| 1,4-Dichlorobenzene | < 200 |
| 1,1-Dichloroethane | < 200 |
| 1,2-Dichloroethane | < 200 |
| 1,1-Dichloroethene | < 200 |
| cis-1,2-Dichloroethene | < 200 |
| trans-1,2-Dichloroethene | < 200 |
| 1,2-Dichloropropane | < 200 |
| cis-1,3-Dichloropropene | < 200 |
| trans-1,3-Dichloropropene | < 200 |
| Methylene chloride | < 200 |
| 1,1,2,2-Tetrachloroethane | < 200 |
| Tetrachloroethene | < 200 |
| 1,1,1-Trichloroethane | < 200 |
| 1,1,2-Trichloroethane | < 200 |
| Trichloroethene | < 200 |
| Trichlorofluoromethane | < 200 |
| Vinyl chloride | < 200 |
| Dichlorodifluoromethane | < 200 |

NOTE: This analysis is equivalent to EPA Methods 601/8010.

**ENERGY LABORATORIES, INC.**P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489**LABORATORY REPORT**

TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-51592 -95
DATE: 12/22/92 da

RECEIVED

DEC 22 1992

ENVIROCON, INC.
Livingston, MT**SOIL VOLATILE SURROGATE RECOVERY**

50 µg/kg Surrogate Standard Spike

| <u>SAMPLE NO.</u> | -----% recovery----- | | |
|-------------------|----------------------------|----------------------------|----------------------------|
| | <u>S1</u> <u>(TOL)#</u> | <u>S2</u> <u>(BFB)#</u> | <u>S3</u> <u>(DCE)#</u> |
| 92-51592 | 103 | 103 | 77 |
| 92-51593* | 97 | 97 | 88 |
| 92-51594 | 103 | 107 | 78 |
| 92-51595* | 99 | 110 | 88 |
| Method Blank I | 104 | 105 | 84 |
| Method Blank II* | 97 | 100 | 91 |

S1 (TOL) = Toluene-d8
S2 (BFB) = Bromofluorobenzene
S3 (DCE) = 1,2-Dichloroethane-d4

QC LIMITS, % Recovery

75-120
75-120
70-120

#Column to be used to flag recovery values with an asterisk.

*2,000 µg/kg Surrogate Standard Spike.



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

M 12/18/92

RECEIVED

DEC 18 1992

December 17, 1992

ENVIROCON, Inc.
Livingston, MT

John Mills
Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

On November 24, 1992 these samples, represented by our laboratory numbers 92-49541 to 92-49542, were submitted to our laboratory for analysis.

The test results and quality assurance were reviewed and approved by the undersigned.

Reviewed by: _____



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

RECEIVED
DEC 28 1992
ENVIROCON, Inc.
Livingston, Mt.

December 22, 1992

John Mills
Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

On December 16, 1992 these samples, represented by our laboratory numbers 92-51592 to 92-51595, were submitted to our laboratory for analysis.

The test results and quality assurance were reviewed and approved by the undersigned.

Reviewed by:

APPENDIX D
AIR SAMPLE RESULTS



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

RECEIVED

TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-51142
DATE: 12/22/92

AIR ANALYSIS

BN
140101-SG-250
Sampled 12/08/92
Submitted 12/11/92
Analyzed 12/15/92

*Transfer pit
outside
walk-in
cool
VE-42*

| Constituent | mg/m ³ |
|---------------------------|-------------------|
| Purgeable Halocarbons | |
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | 4.9 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | <2.5 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-739-4389

LABORATORY REPORT

TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 92-51141
DATE: 12/22/92 da

115 9 0 192
Envirocon, Inc.
Livingston, MT

AIR ANALYSIS

BN
140101-SG-249
Sampled 12/08/92
Submitted 12/11/92
Analyzed 12/15/92

WDRP
V 2 39

| Constituent | mg/m ³ |
|---------------------------|-------------------|
| Purgeable Halocarbons | |
| Bromodichloromethane | <2.5 |
| Bromoform | <2.5 |
| Bromomethane | <2.5 |
| Carbon tetrachloride | <2.5 |
| Chlorobenzene | <2.5 |
| Chloroethane | <2.5 |
| 2-Chloroethylvinyl ether | <2.5 |
| 2-Chlorotoluene | <2.5 |
| Chloroform | <2.5 |
| Chloromethane | <2.5 |
| Dibromochloromethane | <2.5 |
| 1,2-Dichlorobenzene | <2.5 |
| 1,3-Dichlorobenzene | <2.5 |
| 1,4-Dichlorobenzene | <2.5 |
| 1,1-Dichloroethane | <2.5 |
| 1,2-Dichloroethane | <2.5 |
| 1,1-Dichloroethene | <2.5 |
| cis-1,2-Dichloroethene | <2.5 |
| trans-1,2-Dichloroethene | <2.5 |
| 1,2-Dichloropropane | <2.5 |
| cis-1,3-Dichloropropene | <2.5 |
| trans-1,3-Dichloropropene | <2.5 |
| Methylene chloride | <2.5 |
| 1,1,2,2-Tetrachloroethane | <2.5 |
| Tetrachloroethene | 19 |
| 1,1,1-Trichloroethane | <2.5 |
| 1,1,2-Trichloroethane | <2.5 |
| Trichloroethene | 3.8 |
| Trichlorofluoromethane | <2.5 |
| Vinyl chloride | <2.5 |
| Dichlorodifluoromethane | <2.5 |
| Total VOC Response | <30 |



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: John Mills
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: Blank
DATE: 12/22/92 da

RECEIVED
12/22/92
ENERGY LABORATORIES, INC.
Livingston, MT

AIR ANALYSIS

Method Blank
Analyzed 12/15/92

| <u>Constituent</u> | <u>mg/m³</u> |
|---------------------------|-------------------------|
| Purgeable Halocarbons | |
| Bromodichloromethane | < 2.5 |
| Bromoform | < 2.5 |
| Bromomethane | < 2.5 |
| Carbon tetrachloride | < 2.5 |
| Chlorobenzene | < 2.5 |
| Chloroethane | < 2.5 |
| 2-Chloroethylvinyl ether | < 2.5 |
| 2-Chlorotoluene | < 2.5 |
| Chloroform | < 2.5 |
| Chloromethane | < 2.5 |
| Dibromochloromethane | < 2.5 |
| 1,2-Dichlorobenzene | < 2.5 |
| 1,3-Dichlorobenzene | < 2.5 |
| 1,4-Dichlorobenzene | < 2.5 |
| 1,1-Dichloroethane | < 2.5 |
| 1,2-Dichloroethane | < 2.5 |
| 1,1-Dichloroethene | < 2.5 |
| cis-1,2-Dichloroethene | < 2.5 |
| trans-1,2-Dichloroethene | < 2.5 |
| 1,2-Dichloropropane | < 2.5 |
| cis-1,3-Dichloropropene | < 2.5 |
| trans-1,3-Dichloropropene | < 2.5 |
| Methylene chloride | < 2.5 |
| 1,1,2,2-Tetrachloroethane | < 2.5 |
| Tetrachloroethene | < 2.5 |
| 1,1,1-Trichloroethane | < 2.5 |
| 1,1,2-Trichloroethane | < 2.5 |
| Trichloroethene | < 2.5 |
| Trichlorofluoromethane | < 2.5 |
| Vinyl chloride | < 2.5 |
| Dichlorodifluoromethane | < 2.5 |
| Total VOC Response | < 30 |



ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

RECEIVED
DEC 22 1992

ENVIROCON, INC.
LIVINGSTON, MT

December 22, 1992

John Mills
Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

On December 11, 1992 these samples, represented by our laboratory numbers 92-51141 to 92-51142, were submitted to our laboratory for analysis.

The test results and quality assurance were reviewed and approved by the undersigned.

Reviewed by: _____

A handwritten signature in cursive script, appearing to read "J. Standish", written over a horizontal line.

